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The influence of business incubation in developing new enterprises in Australia

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THE INFLUENCE OF BUSINESS INCUBATION IN DEVELOPING NEW ENTERPRISES IN AUSTRALIA

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ABSTRACT

Australia was an early adopter of business incubation, and made substantial investments in it in the early 2000s, however local interest has declined with the closure of big government-funded projects, at a time when international interest in business incubation is increasing. This study revisits the question of business incubators and their usefulness in economic development, describing a case study conducted on a university-linked business incubator in Australia. It investigates the impact of its operations on developing start-up businesses operating from within the facility; the motivations, perceptions and priorities of small businesses tenants and former tenants; and the role of the manager in influencing the development of new enterprises. The study builds on the theoretical understanding of business incubation and a model has been developed that demonstrates the ways in which options theory, coproduction theory, networking theory and social capital theory explain stages of incubation.

The study found the principle motivation for tenants to locate their business within a business incubator was the price for the office space and not the business development assistance that is the primary service of the business incubator. Once operating from within the business incubator, however, the principle advantage perceived by tenants was the provision of business assistance in the development and growth of their businesses. The only disadvantage raised was price as it reduced the pressure to strive for profits and business growth on the tenant businesses. The interaction with the manager was found to have a positive impact on the tenant businesses and contributed to their development. The tenants believed that the interaction was on their own terms and that they could seek advice whenever they needed from the manager. The manager believed that he could add value by assisting the tenants directly, with connecting them and introducing tenants to other service providers and businesses when required.

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Phillip Kemp

24th October 2013

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CHAPTER 1 – INTRODUCTION

INTRODUCTION

Governments invest public monies in programs that assist small to medium-sized enterprises (SMEs) in order to create a variety of outcomes: jobs, growth in number of SMEs, increased competition and increased wealth (Storey, 1996). Business incubation is one of the tools that governments use and fund to assist in this development.

Australia was an early adopter of business incubation, and made substantial investments in it in the early 2000s (ANZABI, 2004). However, local interest has declined with the closure of big government-funded projects, at a time when international interest in business incubation is increasing (Harman, 2009).

There appears to be a sense that business incubation is a concept that has been implemented and does not need to be done again in Australia, even as members of the Organisation for Economic Co-operation and Development (OECD) are looking to business incubation to assist in the development and commercialisation of research from universities and to aid economic development and job creation (Fishback, 2009).

There is particular attention overseas in business incubators and their usefulness in economic development, which suggests there is a value in revisiting incubation and exploring how business incubation could be reinvigorated in Australia, particularly as debate continues regarding how the country will develop economically outside the resources sector.

This thesis describes a case study conducted on a university-linked business incubator in Australia, investigating the impact of its operations on developing start-up businesses operating from within the facility. It seeks to understand the motivations, perceptions and priorities of small businesses that operate within the facility and those that have successfully left the facility. By determining the role of the manager in influencing the

development of new enterprises in Australia, the study will assist any organisation looking to undertake new incubation.

PURPOSE OF THIS STUDY

Countries and communities around the world are looking at ways to develop their economies to create wealth and jobs for their citizens. In this environment, investigating the roles and rationale for business incubation is appropriate. This thesis uses the motivations, perceptions and priorities identified by existing and former tenants of a university-linked business incubator to consider how incubation is valued and determine the role of the manager in influencing the development of new enterprises in Australia.

Many countries have already investigated this method of stimulus and have rolled out government-funded business incubator programs (Fishback, 2009; OECD, 2010; Phillipson et al., 2011); so it is timely for Australia to have an investigation that examines this economic development tool in a local context (Abetti, 2004; Chandra & Fealey, 2009; Rothschild & Darr, 2005).

This study will investigate an operating university-linked business incubator located in Australia, to understand the motivations, perceptions and priorities of small businesses that operate within the facility and those that have successfully left the facility. By investigating the role of the manager in influencing the development of new enterprises in Australia, the study will assist any organisation looking to undertake new incubation.

CONTRIBUTION

Academic research has struggled to define and develop a theory to explain the workings and performance of business incubation (Hackett & Dilts, 2008). Many studies have focused on a singular business incubator operation and investigated the performance of an incubator in terms of the tenants that are assisted. Some studies have investigated business incubators operating in a number of different countries, but again, this has been used to develop a model to determine practices in an individual incubator (Al-Mubaraki &

Busler, 2010; Chandra & Fealey, 2009; Scillitoe & Chakrabarti, 2010) rather than investigating national models of implementing and operating business incubation.

What is lacking in the academic literature is an understanding of the motivations, perceptions and priorities of small businesses operating from within the facility and how these impact on their desire to enter and remain within an incubator, as well as a clearer understanding of the role of the manager in influencing the development of new enterprises. This thesis has set out to contribute to academic studies that have investigated these issues.

A more comprehensive understanding of these factors would provide a framework for Australian organisations considering incubation to tailor services and understand the internal processes that can support and assist future tenants.

BACKGROUND AND JUSTIFICATION

Many countries in the world have undertaken their own investigations in ways in which to stimulate their economies and have decided to introduce business incubation programs to achieve these goals and this economic development strategy is proving successful (Abetti, 2004; Chandra & Fealey, 2009; Rothschild & Darr, 2005). Australia once had a national business incubation program, which operated from 1992 to 2008; however after that program was abandoned and large-scale ventures by Australian governments into incubation effectively ceased.

In the absence of a national incubation approach, there are numerous small and independent incubators, however there is limited research that has been undertaken into their operations (von Zedtwitz, 2003; Burnett, 2009). This study seeks to address this gap by providing a contemporaneous and geographically specific understanding of the motivations, perceptions and priorities of tenants in seeking space in an incubator and developing a clearer picture of the role of the manager in influencing the development of new enterprises in Australia.

THE RESEARCH QUESTIONS

This study will seek to answer three key questions that will help gain a better understanding of the motivations, perceptions and priorities of tenants in seeking space in an incubator and the influence the process of business incubation (including the role of the manager) has on the development of new start-up small businesses that operate from such facilities. The research questions are:

1. **What are the advantages perceived by tenants/former tenants of an incubator environment?**
2. **What are the disadvantages perceived by tenants/former tenants of an incubator environment?**
3. **What impressions do tenants/former tenants have of the interaction with the incubator manager?**
4. **What are the motivations of tenants/former tenants for locating within an incubator?**

DEFINITION AND TERMS

The following definitions are adapted from Hackett and Dilts (2004b), with reference to the usage of the terms in Australia. There are a range of definitions that have been used in the literature; most commonly the terms incubator and incubation have been used interchangeably. The definitions as presented by Hackett and Dilts (2004b) will be used to clarify what can be a confusing set of terms.

Business incubator

The term of business incubator is a broad concept, often used synonymously with business incubation. In this study, the term will be used specifically to define the organisation of the group of services defined as business incubation (see below) and/or the physical aspect of the building which houses the business incubation service.

Business incubation

This definition describes the process of assistance provided by a business incubator to businesses operating from within the facility. It specifically refers to the services provided to these businesses, including management advice and training, office services such as secretarial and room hire and networking functions.

Business incubation program

While business incubation describes the actual assistance provided by an incubator to a tenant, the term business incubator program describes the notion of incubation and the policy supporting that notion. It also describes multiple business incubators within a state or national funding program for business incubation.

Business incubator model

A high-level concept, the term business incubator model is used to describe the manner in which the operations of a business incubator are organised, for example as a for-profit or not-for-profit legal structure, or as a physical service provided from a business incubator, or as a virtual model, not confined to a physical space.

Business incubator tenant

The term business incubator tenant describes a start-up entrepreneur or business that is tenanted (housed) in a business incubator. It is a term most commonly utilised within Australia, rather than internationally, where the synonymous term incubatee is used. Incubator tenant will be used in preference to incubatee in this study.

Graduate business

A graduate from a business incubator is considered as being a small business that has successfully started and developed within the facility to the point at which the owner can operate the business outside in alternative premises without the day-to-day assistance from the business incubator program.

EMPIRICAL DESIGN

Business incubation studies frequently lack a solid theoretical framework or use poorly defined concepts and measures for the factors under investigation (Bollingtoft & Ulhøi, 2005; Hackett & Dilts, 2004b; Mian, 1994). This study has been developed to provide an insight into the establishment, operations and performance of business incubators using direct evidence from current and former tenants of a business incubator and the business incubation manager.

A case study approach employing multiple sources of data collection was used to establish a chain of evidence from which to review the cases, as recommended by (Yin, 2009). Yin (2011) describes four potential data collection activities: interviewing; observing; collecting and examining; and feeling. Within these four methods the following practices were observed:

Interviewing: structured questionnaire and qualitative interviews of tenants and the incubator manager, with qualitative interviews conducted using Yin's (2011) recommendations of speaking in modest amounts, staying non-directive and neutral, maintaining rapport and analysing when interviewing (Yin 2011).

Observing: attendance at the incubator to see how the operation was set up, how the manager interacted on a casual basis with tenants and support staff, and observing day-to-day activities, then deriving meaning from these observations to give context to other sources.

Collecting and examining: collection of other non-directly observable information about the incubator's activities, including annual reports, information gathered from the organisation website, and newspaper articles about the history of the incubator.

Feeling: incorporation of the researcher's perceptions gained when talking to interview subjects and also when witnessing interactions at the incubator. (Yin, 2011)

SUMMARY

This chapter introduced the topic being investigated in this study, being the motivations, perceptions and priorities of tenants in seeking space in an incubator and the influence the process of business incubation (including the role of the manager) has on the development of new start-up small businesses that operate from such facilities.

It provided an overview of incubation as a government policy within Australia and overseas, and provided an overview of the terminology used in this field. It introduced the issue regarding the lack of empirical research into the theory of business incubation and how it assists small businesses. The purpose of the study was outlined and the research questions that were investigated.

The following chapter, Chapter 2, will describe the academic literature and theories that have been applied to business incubation and identify the factors that contribute to incubator effectiveness. The existing literature will be presented to support the research questions investigated in this study.

CHAPTER 2 – LITERATURE REVIEW

INTRODUCTION

This literature review has three parts; the first part looks at the definitions of small business, their role in the economy and the rationale from the governments' perspective for developing and fostering small businesses for economic benefits. It includes an examination of the literature around business incubation, examining what different types of business incubators exist, what they do, how they operate and the models in existence.

The second section includes an examination of the Australian context around incubation, university-linked business incubators and how these frameworks apply to this specific study. It examines both the academic and industry literature around the defining of 'successful' incubation and the factors that participants and researchers believe are essential to best-practice operation of business incubators.

The third section examines the theories that have been applied to incubation, and how these theoretical frameworks have been used to explain the incubation processes. Finally, the literature is briefly summarised.

SECTION ONE: BACKGROUND TO SMALL BUSINESS

WHAT IS A SMALL BUSINESS?

Small business is the largest classification of business type in Australia, representing some 2.05 million actively trading businesses as at June 2009 (Australian Bureau of Statistics, 2010). In total, they represent some 96% of all business types in Australia, and employ approximately half of the total Australian workforce, with an estimated contribution of one third to gross domestic product (Mazzarol, 2006b). This is a substantial contribution to the economic and social nature of Australia. In Australia, there are more than 202,818

small to medium enterprises (SMEs) employing in excess of 350,000 people, which represents 48% of the private sector workforce (Small Business Development Corporation, 2011).

The Australian Bureau of Statistics (2010) defines small businesses as having fewer than 20 staff, or fewer than 200 in the case of manufacturing businesses, based on the number of full-time equivalent employees. Its definition of business type based on size includes:

- Non-employing businesses – sole proprietorships and partnerships without employees
- Micro businesses – businesses employing fewer than 5 people, including non-employing businesses
- Small businesses – businesses employing fewer than 20 people
- Medium businesses – businesses employing 20 or more people, but fewer than 200 people; and
- Large businesses – businesses employing 200 or more people.

Alternative definitions of small business rely less on the size of an enterprise than on its characteristics, although those features may be harder to quantify. This is especially true when making international comparisons, in which different countries define a small and medium-sized business in different ways. Jensen (1987) argues that small businesses are not scaled down versions of large businesses and operate in a different way to big businesses in many different ways, mostly due to the influence and personal relationships of the owner. The seminal work by Bolton (1971) suggests small businesses differ from larger businesses as they are often managed by the owners or family members, the owners have contributed their own capital to the business, they have limited market power and that they are operated less formally, but rely on the intuition of the owner rather than management structures or procedures.

More importantly, Westhead and Storey (1996) argue their size means they have a number of fragile characteristics, including that they operate in an uncertain environment, have limited access to financial resources, rely on fewer customers for the majority of their income, and that there is an over-reliance on personal relationships, both within and without the business, rather than systems and processes.

What these quantitative and qualitative definitions of small business indicate is that small business is a unique grouping of business, and cannot be considered as just being smaller versions of large businesses. These unique characteristics require consideration and understanding when attempting to describe any interaction or process that involves them.

IMPORTANCE OF SMALL BUSINESSES WITHIN THE ECONOMY

The importance of SMEs in economic and social development is recognised throughout the world (Mazzarol, 2006b). In Australia, SMEs are seen as generators of wealth, able to assist in developing the economy and create labour opportunities, as well as playing a role in reversing rural de-population, the equitable distribution of wealth and opportunity, the conversion of local savings into investment, technical innovation, balance of payment stability, equality and social justice, regional prosperity and the broad economic growth and development agenda (Mazzarol, 2006b). The focus on SMEs and their contribution to economic prosperity and stability has broadened, with recognition that they make a fundamental contribution to economic and social policy and the creation of a civil society (Storey, 1996).

Within Australia, there is a political view that small businesses are also focal points of entrepreneurship and innovation — two elements that, if harnessed, can assist with economic development and productivity growth (Centre for International Economics, 2009; Department of Innovation Industry Science and Research, 2008; Mazzarol, 2006a). This occurs mostly in newly created firms, or start-ups, which contribute to the creation of new net jobs to an economy (Stangler & Litan, 2009).

Louca (2003) estimates returns to Australia as a whole from business investment in research and development of over 100 per cent — compared with returns from traditional investment of around 10 to 15 per cent (Louca, 2003). Policy-makers also see new business start-ups as a way in which to increase the level of innovation, by commercialising new ideas, technology and science (Hannon, 2005).

The nature of start-ups is such that most, although not all, are small businesses, as defined by the ABS. Although small, their numbers mean they have a significant combined weight as employers in the economy. To illustrate the impact small start-ups can have on

employment, recent research by the Kauffman Foundation in the United States shows that nearly all net job creation in the United States has occurred in firms less than five years old (Stangler & Litan, 2009). In further analysis of their data, two-thirds of all new jobs added to the US economy in 2007 were created by businesses started that year, of which 85% could be defined as small business, using our Australian definition of small business. In Australia, small businesses represent 96% of all businesses in the non-agricultural sectors of the economy, they employ just under half of the Australian workforce, and they account for about a third of Australian GDP (Department of Innovation Industry Science and Research, 2010).

These factors combine to make the small business sector an important area of research, although the literature on the contribution of small businesses remains patchy. Small business is the predominate form of business in terms of numbers, and for half the working population, the business structure of their workplace. Small businesses are not just smaller versions of large businesses; they operate in a different manner and within a different context to large business. Therefore, there is an argument for increased research that can help create a framework that will help to drive and support the success of the small business sector for both economic and social outcomes.

BACKGROUND TO BUSINESS INCUBATORS

While business incubation is an international practice with more than 4,000 incubators used worldwide, it is an economic development mechanism that has undergone some changes since inception. This section outlines the background to business incubators (and business incubation) and indicates major shifts in the past 50 years in physical presence, legal structures and types of tenants. The following section will address shifts in services in more detail.

EARLIEST INCUBATORS

Business incubation is usually dated from 1956, the year in which Massey-Ferguson, the biggest industry in the town of Batavia, New York, closed down. A large complex of

multistorey buildings was left abandoned and unemployment was estimated to have climbed to more than 20 per cent (NBIA, 2012c). At the time, the Manusco Family, headed by Joe Manusco, a hardware store manager, purchased the complex and first sought to find a single company to rent the plant. According to NBIA (2012c), after a month this idea was abandoned and instead, Manusco divided the building and rented it to separate businesses "that he would nurture by providing shared office services, assistance with raising capital and business advice" (NBIA, 2012c). The Batavia Industrial Centre he created remains in operation and recently celebrated its 50th anniversary, with the claim of being the world's oldest incubator (Anselmo, 2009).

While Manusco's incubator is considered to be the first in the world, adoption of the model was slow. Knopp (2012) notes that by 1980, there were only 12 incubators in the United States and it wasn't until the period of 1984-87 that the work by the US Small Business Administration to build the incubator movement prompted further growth. This work included regional conferences to promote the incubator concept, newsletters and books on incubation and the formation of the NBIA (Wiggins & Gibson, 2003). Other significant moments in the early development of business incubation within the US and elsewhere include:

- The creation of the National Science Foundation's Innovation Centres, which included incubation as part of programs. The centres were developed and supported by the foundation as early as 1973 (Bhabra-Remedios & Cornelius, 2003)
- The 1982 enactment in Pennsylvania of the state's Ben Franklin Partnership Program which advanced a comprehensive technology and manufacturing agenda, including incubators as a key component (NBIA, 2012b)
- The use of this program as a model for other US state support for business incubation (NBIA, 2012b)
- The adoption of incubator models in the UK and Europe in the 1980s (CSES, 2002)
- The development of China's incubation program, which grew from the catalyst of United Nations Development Program in 1987 to have 127 incubators by 2002 (CSES, 2002)
- The creation of Australia's first incubation programs in the mid to late 1980s (AusIndustry, 2003)

PHYSICAL STRUCTURE OF INCUBATORS

Early incubators were geographically rooted and physically imposing, with the earliest incubators created in large former factories and plants, which is to be expected considering the motivation of many early incubator operators was to fill pre-existing real estate that would otherwise be left vacant.

As the sector developed, however, the physical structures of incubators changed, reflecting the fact many were developed in purpose-built facilities rather than repurposed properties (C Campbell & Allen, 1987; CSES, 2002). With the development of the internet and greater opportunity for businesses to connect online or through email and other communication tools, came the rise of the virtual incubator, or incubators without walls, as they were sometimes called (Bollingtoft & Ulhøi, 2005; Nowak & Grantham, 2000).

The rise of sector-specific incubators also changed the physical requirements of incubation in many cases. As an example, incubators that assist manufacturing businesses tend to require a greater floor space than those assisting service-based firms, and need specialised equipment or facilities such as fabrication and industrial space rather than office space. A retail incubator may need shop fronts and warehousing room while a food incubator will need commercial kitchen facilities (Lewis, Harper-Anderson, & Molnar, 2011).

Studies that have sought to benchmark physical and other characteristics of European incubators have established that 'typical' incubators in the EU have approximately 5,800 square metres of space for tenants, sufficient to accommodate about 18 firms at any one time (CSES, 2002). The NBIA's *2002 State of the Business Incubation Industry* survey found incubator sizes in the US ranged from 500 square feet (a mere 46 square metres) to 770,000 square feet or 71,535 square metres). The average US incubator was approximately 4,300 square metres and the median size approximately 2,300 (Boyd, 2006).

The Centre for Strategy and Evaluation Services (CSES, 2002) report to benchmark European business incubators argued the term 'incubator' is now used to encapsulate a broad swathe of facilities (virtual and physical) that embrace the idea of enterprise support. The following figure (Figure 2.1) illustrates the relationship the CSES sees between different forms of incubators and their development over time.

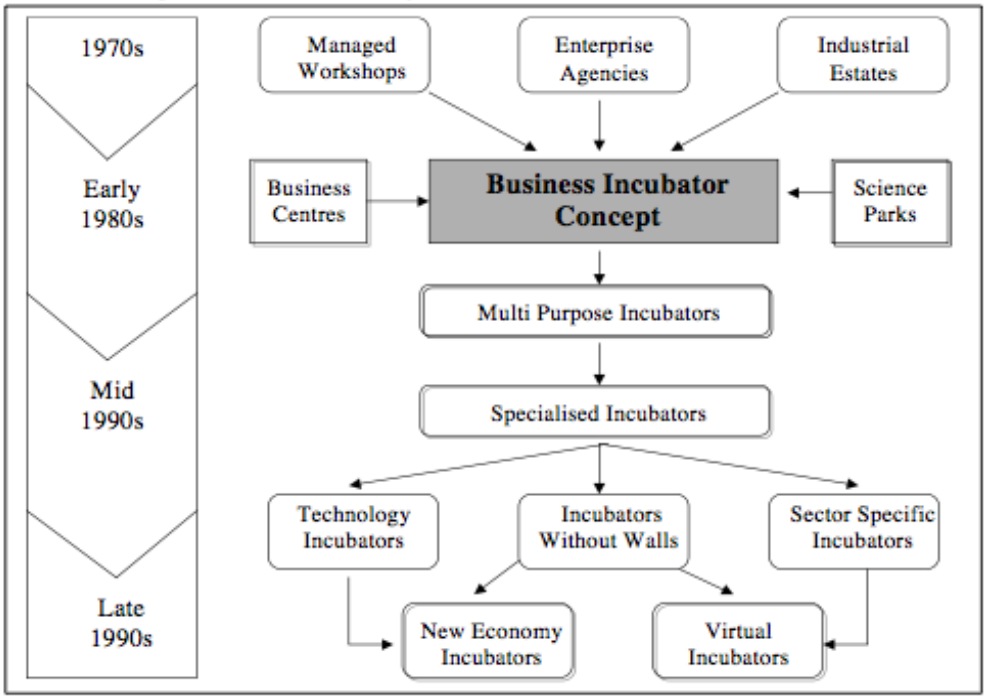

Figure 2.1: Evolution of the business incubator model (CSES, 2002)

LEGAL AND OPERATIONAL STRUCTURE OF INCUBATORS

Over time, the legal structures behind many the facilities have changed. The National Business Incubator Association (NBIA) traces three movements in the development of incubator services, which are described in more detail in the section below, but also notes that there has been a shift from the days when almost all incubators within the United States were non-profit entities to other models, including for profit entities (Knopp, 2012). In 1998, it was estimated that 90 per cent of incubators were non-profit entities, but by 1999 and 2000, during the so-called 'dot-com' era, about 400 for-profit incubators were created (Wiggins & Gibson, 2003). The dot-com bust removed some of these players but within more recent years, a new model has become more common, that of intra-ventures or new initiative groups, sponsored by big corporations using venture funds to invest in external start-ups (Wiggins & Gibson, 2003).

The NBIA now estimates a quarter of North American incubators are sponsored by academic institutions, 16 per cent are sponsored by government entities, and 15 per cent

are sponsored by economic development corporations. Some 5 per cent are hybrids with multiple sponsors and 10 per cent are for-profit. The remaining incubators have no sponsoring or host organisation (Knopp, 2012).

TENANT MIX OF INCUBATORS

At the same time as the physical and legal structures of incubators have changed, there has also been a shift in the focus of incubators in terms of the tenants they seek to attract and develop. Wiggins and Gibson, 2003, describe the change in focus over time as follows:

> Earliest incubators: Focused predominantly on light manufacturing, new technologies, and services.
>
> Later incubators: Focus diversifies to extend to biotechnology, ceramics technology, clean energy, software, internet-based services, telecommunications and the arts.
>
> Recent incubators: Incubators prove successful for high-tech industries, including aerospace, manufacturing needing advanced technology and procedures, advanced materials and materials processing, modelling and simulation for scientific applications, biomed/biotech, software & IT systems, transportation and electronics.
>
> (Wiggins & Gibson, 2003, p. 57)

SUMMARY OF BACKGROUND TO INCUBATION

It can be seen then, that while business incubation is not a new concept, it is an ever-evolving one. The physical structure of incubators, the legal and operational framework in which they are founded and function and the types of tenants they seek to attract have changed over time. Because of this, the definitions of 'incubation' and 'incubator' has also shifted, which will be explored in more detail in the next section.

TAXONOMIES OF BUSINESS INCUBATORS

There is no single definition of what a business incubator is and does, because incubators have a number of functions, represent a range of stakeholders, and deliver varied services to different clients (Hackett & Dilts, 2004b). Indeed, as seen in the previous section, the nature of business incubation has changed over time, with several movements driving change and thus definitions of a business incubator from 20 years ago do not always reflect current thinking or practices. In this section, the review will consider the definitions of business incubation, the changes to these definitions over time, the categories or types of incubator and the Australian experience of incubation. This overview helps position business incubation programs overall and, where business incubators differ, this is highlighted.

MOVEMENTS IN INCUBATOR DEVELOPMENT

The NBIA traces incubator development to three movements, which are described in more detail in the next section, but relate to the economic circumstances of the areas from which the movements developed.

The first movement grew out of a desire to fill otherwise vacant old factories and abandoned buildings in economically depressed areas in America's Northeast and Midwest. The second movement was prompted by the National Science Foundation's desire to facilitate innovation and entrepreneurship in universities and the third movement sprang from the private sector's desire to find new paths for investment and commercialise emerging technologies (Carrera, Meneguzzo, & Messina, 2006). As these movements have waxed and waned, the definition of incubation has changed as well. To understand how this definition has shifted over time, it is useful to look at the specific functions of the progenitors of today's incubators and how the types of incubators function today.

THE REAL ESTATE SOLUTION

Lish (2012) describes the first incubator in the late 1950's as a real estate solution to fill an empty business, with a landlord in Batavia, New York subdividing a large, vacant building into small offices that were filled with individual tenants.. An early tenant was a chicken farmer and this led to the use of the term incubator in early marketing (Leblebici & Shah, 2004; Lish, 2012). Despite the efforts in Batavia, the concept did not catch on widely in the US until the late 1970s. In 1980, approximately 12 business incubators were operating in the United States — all in the industrial Northeast of the country, which had been hurt economically by plant closures (Leblebici & Shah, 2004).

A basic definition of what was at the time a relatively new form of economic support for businesses, described incubators as:

> "… a new concept in entrepreneurship and economic development which utilises large, often old, building to house new small businesses. The unique aspect of incubators is that the businesses share administrative services in addition to renting space in the building. Typically, the incubator provides clerical and receptionist staff, computer and copying equipment, accounting and bookkeeping help and conference rooms. Management assistance is generally provided by either the incubator staff or outside consultants, and financing is often available."
>
> (Fry, 1987, as cited in Hackett & Dilts, 2004b, p. 80)

As can be seen from Fry's (1987) description above, incubators were initially described in terms of buildings and administrative services. At the time, there was growing recognition that other aspects of incubation, including enterprise development, a consultancy network and entrepreneurial strategy were important. As Allen and Weinberg (1988) noted:

> "Emphasis in incubator programs on site development is misplaced in light of the management assistance needs of entrepreneurs." (Allen & Weinberg, 1988, p. 21)

The early real estate-based definition can be contrasted with a later definition that highlights the changing nature of business incubation.

> "Business incubators … nurture and grow start-ups in the Internet economy. They offer fledgling companies … office space, funding and basic services such as

> recruiting, accounting and legal – usually in exchange for equity stakes." (Hansen, Chesbrough, Nohria, & Sull, 2000, p. 75)

Hansen *et al* (2000) adapt their definition of incubation to suit the prevailing economic conditions at the time: an era in which fast-growing dot-com businesses dominated the interest of policy makers and supporters of small business. While Fry (1987) focuses on the bricks and mortar approach of business incubation, Hansen *et al* (2000) focus on the type of businesses and the financial model of incubation.

THE RISE OF ADVISORY SERVICES

Although this is a definition drawn from the American literature, an alternative Australian definition AusIndustry (2003, p. 2) from the same period reflects the policy context for business incubation in Australia:

> "A small business incubator is a facility designed to assist new and growing businesses to become established and profitable by providing premises, advice, services and support. Business incubators are known to reduce the failure rate of new start-up businesses. In doing so they create jobs and assist local economic development." (AusIndustry, 2003, p.2)

This AusIndustry (2003) description was made at a time in which Australia had a funding program to establish business incubators, which has now ceased.

The NBIA, which is the oldest body of its type in the world, recently celebrating its 25th anniversary (Monkman, 2010), also moved to a more contemporary description of incubation in the 2000s. NBIA says business incubators:

> "… nurture the development of entrepreneurial companies, helping them survive and grow during the start-up period, when they are most vulnerable. These programs provide their client companies with business support services and resources tailored to young firms. The most common goals of incubation programs are creating jobs in a community, enhancing a community's entrepreneurial

> climate, retaining businesses in a community, building or accelerating growth in a local industry, and diversifying local economies." (NBIA, 2012a)

As part of the increased focus on providing advisory services, there has been in recent decades a push towards 'best practice' incubation, driven in part by the university sector and its interest in using incubation to commercialise research and facilitate innovation (Hisrich & Smilor, 1988; Lalkaka, 2001; Markman, Phan, Balkin, & Gianiodis, 2005; Mian, 1997). Markman et al, 2005, argues that the university sector increasingly views itself as a catalyst of new venture formation and regional development through the process of technology transfer and, by operating in this way with tools such as incubation, a university is able to show a return to society on taxpayer investments and research grants (Markman, et al., 2005). Bollingtoft and Ulhøi, 2005, describe the main goal of university-related incubators as transforming research and development into new products or technology, "that is, they are primarily interested in development as an end in itself, rather than nurturing and developing entrepreneurial talent, companies, and profits, as is the case in other types of incubators" (Bollingtoft & Ulhøi, 2005, p. 271).

THE SHIFT TO VENTURE CAPITALISM AND INVESTMENT

The third movement traced by the NBIA is the rise of venture capitalist investment in start-up firms and the private sector's desire to find new paths for investment and commercialising emerging technologies (Carrera, et al., 2006). Wiggins and Gibson, 2003, describe the actions of large corporations including Intel, HP and Dell to set up corporate venture funds that invest in externally located start-up firms, while Samsung and others have technology teams that operate offsite in incubation facilities. Other major firms, including Ford, Adobe and Panasonic, developed their own traditional incubators (Wiggins & Gibson, 2003).

The European Union benchmarking study of incubators describes these 'new economy' incubators as having significant differences from traditional incubators in that they are predominantly private-sector owned and profit-driven with return for services coming from investment in embryonic companies rather than in rental income returns. These

incubators also focus predominantly on high-tech and internet-related activities, do not have job creation as their principal aim and often are virtual rather than physical incubators with financial services at the core of their offering (CSES, 2002).

Reflecting the changes and diversity of incubators, and taking into account their differences in goals, strategy, physical location, legal structure and service offerings, the NBIA's most recent definition of incubation is more comprehensive than earlier iterations and includes the growing importance of services, entrepreneurship, strategy, and tailored or targeted support:

> "Business incubation is a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding. These incubator graduates have the potential to create jobs, revitalize neighbourhoods, commercialize new technologies, and strengthen local and national economies.
>
> Critical to the definition of an incubator is the provision of management guidance, technical assistance and consulting tailored to young growing companies. Incubators usually also provide clients access to appropriate rental space and flexible leases, shared basic business services and equipment, technology support services and assistance in obtaining the financing necessary for company growth."
>
> (NBIA, 2012d)

As can be seen in the shift of definitions over time, there has been an evolution within incubation that begins in bricks-and-mortar provision of office space but transforms to a better understanding that enterprises need more than space to survive and benefit from advice, networks, finance, sustained assistance and early access to the tools larger, more established businesses can afford to supply themselves.

THEMES WITHIN THE DEFINITIONS OF BUSINESS INCUBATION

There are a variety of themes that emerge from these definitions. These include the type of services offered by business incubators, ranging from the accommodation described by Fry (1987) to the individual start-up assistance described by Hansen et al (2000), to the broader development of a community, industry and economy, now described by Monkman (2010). There is also a shift in the types of businesses that are to be incubated, the organisational aspects of the business incubator, and the outcomes that the business incubator is trying to achieve.

Although aspects of the definition of businesses incubation have changed over time, some elements remain consistent. Monkman (2010) summarises those aspects that have not changed since the beginning of business incubation in the 1950s, highlighting three features of business incubation — the age of the business, the delivery of assistance and the goal of graduation: the incubator must have as its mission to provide assistance to early-stage companies, it must be able to provide business assistance to tenants and it must bring tenants to economic self-sufficiency, and then graduate them from the facility. Beyond these elements, however, the concept of what a business incubator is and does has evolved from when they were first established over 50 years ago. As with any new idea, initial efforts are developed, experience is learnt from and then this is used to revisit and improve on existing concepts. This process has affected business incubation in the same way, and will likely continue to do so into the future.

WHAT TYPES OF INCUBATORS CURRENTLY EXIST?

Within the broad definition of incubation there are many specific types of business incubators, from industry-focused incubators, to university based, to those with a specific purpose such as job creation to those that are created by venture capitalists to house the firms they invest in. The focus of this study is on a university business incubator, which can be defined as being a business incubator that is either located at a university premises, owned by a university or has the involvement of a university faculty in the operations of the business incubator (Hackett & Dilts, 2004b; Lalkaka, 2001; Mian, 1996; Petree, Petkov, & Spiro, 1997).

There are different ways of defining 'types' of incubators, including by sector (technology, manufacturing or retail, for example) or by sponsor, such as a government-supported incubator, one run by a research centre or one operated as a not-for-profit. The OECD (1999) when it defined three types of business incubators, based on the role they play in the economy. They were:

> General/Mixed-Use Incubators: The main goal of these incubators is to promote continuous regional industrial and economic growth through general business development. While these incubators include knowledge-intensive firms, they also include low technology firms in services and light manufacturing. A main focus of support is access to local/regional sources of technical, managerial, marketing and financial resources.
>
> Economic Development Incubators: These are business incubators whose main aim is to stimulate specific economic objectives such as job creation and industrial restructuring. Often the result of local government initiatives, the main goal is to help create new firms and nurture existing firms that create jobs. In some countries, this goal may target specific groups such as youth, long-term unemployed, women and minorities. In the United States, examples include "empowerment/micro-enterprise" incubators.
>
> Technology Incubators: These are incubators whose primary goal is to promote the development of technology-based firms. These are mainly located at or near universities and science and technology parks. They are characterised by institutionalised links to knowledge sources including universities, technology-transfer agencies, research centres, national laboratories and skilled R&D personnel. Specific industrial clusters and technologies may also be targeted such as biotechnology, software or information and communications technologies. A main aim is to promote technology transfer and diffusion while encouraging entrepreneurship among researchers and academics. In some countries, technology incubators not only focus on new firms but also help existing technology-based small firms, including subsidiaries of larger established firms.
>
> OECD (1999, p. 14)

However, in their review of the academic literature, Hackett and Dilts (2004) make the point that the taxonomy of business incubators can be based on the incubator's primary financial sponsorship, but also three other criteria: a) whether tenants are spin-offs or start-ups; b) the business focus of the tenants; and c) the business focus of the incubator (Hackett & Dilts, 2004b).

Barrow (2001) in his book on business incubation described five types of business incubators, divided by their primary and subsidiary goals, as shown in Table 1. Barrow attempts to break through the various permutations and combinations of business incubation expressed around the world with his description.

Table 2.1: Primary and subsidiary goals of different types of incubators (Barrow, 2001)

	For-profit property development incubators	**Non-profit development corporation incubators**	**University incubators**	**For profit investment incubators**	**Corporate venture incubators**
Main Goals	Property appreciation Maximise occupancy Sell services to tenants	Job creation Encourage entrepreneurship Diversify economic base	Faculty-industry collaboration Commercialise university research	Make substantial capital gain quickly	Get into related markets quickly and inexpensively Have a window on related technologies
Subsidiary Goals	Create investment opportunities for more property	Generate sustainable income to break-even point Use vacant premises	Exploit investment opportunities Create goodwill in local community	Develop synergies in investment portfolio	Provide entrepreneurial opportunities for staff Make money

The CSES (2002) benchmarking report for European incubators maps the types of business incubators based on their function as well as the level of technology and management support on offer.

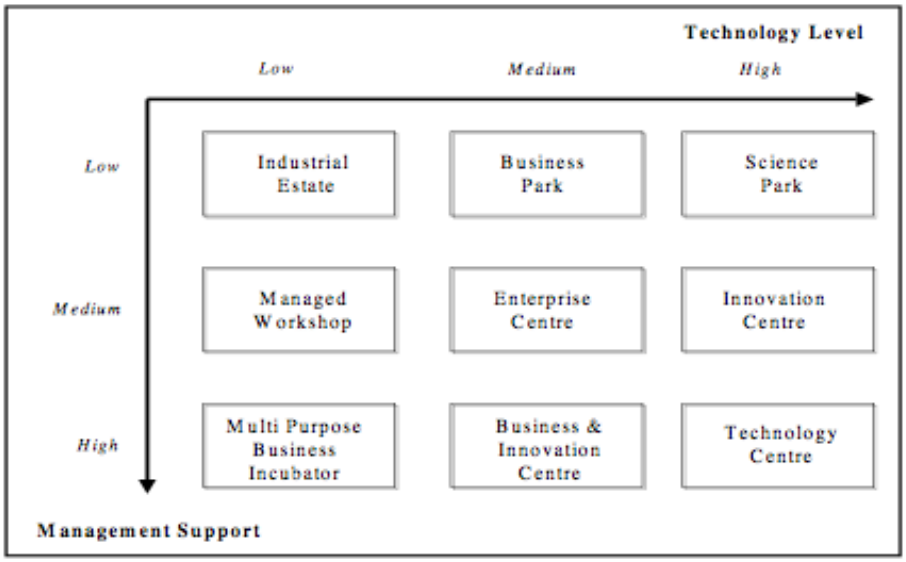

Figure 2.2: Typology of business incubators (CSES, 2002)

An alternative perspective is offered by Hannon (2004), who uses gardening as a metaphor to compare types of business incubator environments and their uses . He suggests there are three main types of incubation environments — the germinator, the incubator and the accelerator — each with different characteristics in how they assist firms (Table 2.2). What is interesting to note is the different approach Hannon (2004) takes compared to Barrow (2001). While Barrow (2001) describes five types of incubators and their main and subsidiary goals, Hannon starts with the goals and describes how they might be achieved using three different types of incubators. Hannon's approach offers clarity — it links the two ideas but makes the incubator choice secondary to the decision on outcomes, rather than vice versa.

This study will utilise the clarity that Hannon's approach offers, in the investigation of the case study.

Table 2.2: Description of types of business incubation (Hannon, 2004).

Specific program goals	Germinator	Incubator	Accelerator
Creating new ventures	Creative, learning environment Scanning for people with ideas Identifying lots of opportunities Open policy, flexible? High use, high turnover Short-term participation Easy access	Selective Hands-on approach Validating/testing opportunities Building team capability Strengthening venture foundations and market access Exit strategy	Probably not the key purpose – could be fatal for many new firms unable to manage fast growth and change
Creating ventures with high-growth potential	Fast responses to emerging opportunities Tools for quick assessments Strong networks and contacts Direct access to accelerator	Hands-on approach, individually focused Resource intensive Strong selection and exit policies Global expertise Direct access to accelerator	Hands-in approach Low volume, very selective Focus on money, markets and management Direct access to capital markets IPO goal Highly commercial Supporting new venture growth
Supporting new ventures	Investment-preparedness focus Low-cost inputs Wide use of networks, peers Easy access to incubator	Local support Building to market commercialisation Strong networks Exit policy	Extensive professional networks Commercial environment Access to global information and opportunities Direct access to wide ranging resources and expertise

UNIVERSITY BUSINESS INCUBATION

The incubator researched in this study is linked to a university though not a university-run incubator per se and, unlike some university-run incubators, allows for general purpose businesses as tenants (Lalkaka, 2001; Tamasy, 2007). The types of businesses that are incubated within incubators linked or operated by universities vary for a number of

reasons, including due to their strategic focus and resources; however they are generally new and operate in emerging industries (Mian, 1994). As was established by Bollingtoft and Ulhøi, (2005), many university business incubators have the transfer of technology through commercialisation as their primary goal rather than economic development or job creation, however as Markman et al, 2005, assert, the university sector increasingly views itself as a catalyst of new venture formation and regional development.

The impact of university business incubation on tenant performance will be discussed later in this chapter.

SECTION SUMMARY

What can be seen from this section is that incubation has evolved over time, and as it has done so, the definitions have also shifted. While some elements have not changed, such as the age of business, the provision of support, and the need to encourage self-sufficiency, there is now a wide range of facilities and programs that can broadly come under the incubation banner. It is possible to categorise incubation programs or incubators using differentiators such as

- sector (technology, manufacturing or retail, for example),
- sponsor (university, government, not-for-profit, venture capitalist),
- role intended that incubators play in the economy
- primary and subsidiary goals
- function
- nature of business being incubated.

One subset of incubators is the university business incubator, which is salient in this study and will be explored in more detail later in this chapter. Regardless of the category of incubator, however, the focus has remained on supporting and developing the enterprise, to the point where it is strong enough that the incubator is no longer needed.

SECTION TWO: INCUBATION AND ITS INFLUENCE ON ENTERPRISES

This section includes an examination of the Australian context around incubation, describes the nature and role of university-linked business incubators, and examines how well the accepted definitions of university business incubation apply to this specific study. One of the challenges of researching business incubation in Australia is the lack of academic research in the area. This has been noted by Schaper and Lewer (2009) in their paper looking at the state of business incubators in Australia. They also make the point that Australia is not unique in this situation. The OECD (1999) makes a similar statement in a report on business incubation. For this reason, much of the available literature comes from government reports or policy documents.

Industry and trade literature offers a number of insider insights that may be of use in considering theories of incubation, while academic literature has attempted to apply a number of different theoretical models to explain incubator process, function and success which will be discussed in greater detail in the next section. It should be noted, however, that many theories originate outside the incubation sector itself and have been repurposed from studies of entrepreneurs or start-up ventures outside the incubation field (Lish, 2012).

THE INFLUENCE OF BUSINESS INCUBATION IN DEVELOPING NEW ENTERPRISES

The high number of small businesses would suggest that starting a new business is easy; however, this is not the case. Twenty-five years ago, the Federal Government of Australia responded by funding the creation of business incubators, to assist people to start their own small businesses. Australia was an early adopter of business incubation (ANZABI, 2004; Burnett, 2009) . However, local interest has declined with the closure of big government-funded projects, at a time when international interest in technology business incubation is increasing (C Campbell & Allen, 1987; Chandra & Fealey, 2009; Harman, 2009; Lalkaka, 2003).

In simple terms, the traditional incubator is a microenvironment with a small management team that provides physical workspace, shared office facilities, counselling,

information, training and access to finance and professional services in one affordable package (Lalkaka, 2003). The incubation process has been described in many different ways. Hackett and Dilts (2008) described it as a 'black box' with unknown activities occurring within (Hackett & Dilts, 2008). Alternative descriptions rely on gardening terms such as germination, as a metaphor for the activities within an incubator (Hannon, 2004).

Globally, the process of business incubation is quite simple: a prospective tenant is interviewed for their suitability for business incubation and they move into an office or other space inside the incubator from which they will operate their business. The business incubator provides assistance in the form of office services, management advice, mentoring, networking and general business assistance. The incubator may also be able to provide funding assistance to grow the venture. After a period of time, (likely to be at least three years), the business graduates from the incubator into the surrounding business economy (Burnett, 2009; Grimaldi & Grandi, 2005; Hackett & Dilts, 2004b; Smilor, 1987). And as one business graduates another new business takes their space and thus the cycle begins again.

As the positive impact of small business on the economy is well known there is also the concurrent issue of small business failure, which can potentially have a detrimental effect. This prompted business incubators to be a focus for economic development programs (C Campbell & Allen, 1987), particularly as they have been found to reduce the failure of start-up small businesses, create jobs, and wealth in a regional economy (Hackett & Dilts, 2004b). Monkman (2010), in his address to the US House of Representatives Small Business Committee, made the point that business incubators create new jobs for a low subsidy cost, estimated to be US$1,109 per job. His submission argued:

- Incubator companies experience very healthy growth. For example, the average annual growth in sales per firm was $239,535.
- Most incubator graduates provide employee benefits.
- Incubation programs contribute to their client companies' success and expand community entrepreneurial resources.
- Business incubation programs improve local community image (Monkman, 2010, p.3).

A 2008 study conducted by consulting firm Grant Thornton for the United States Department of Commerce, Economic Development Administration (EDA) told a similar story about the success of business incubation programs as a means of creating jobs. The report, Construction Grants Program Impact Assessment Report by Arena, Adams, Rhody, Noyes and Noonan (2008), outlined findings which showed that business incubators are an effective public-private approach that produces new jobs at a low cost to the government. According to the report,

- for every US$10,000 in EDA funds invested in business incubation programs, an estimated 47 to 69 local jobs are generated
- incubators provide up to 20 times more jobs than community infrastructure projects at a federal cost per job of between US$126 and US$144, compared with between US$744 and US$6,972 for other infrastructure projects
  (Arena et al, 2008 p.1).

While the Monkman (2010) and Arena et al (2008) reports are focused on the outcomes of American incubation programs, they suggest healthy economic development outcomes both for tenants and the business community from similar programs. Unfortunately there is not a similar report that has produced comparable empirical evidence in Australia. However if the international experience was extrapolated, it suggests that business incubation can assist the small business sector in multiple ways including helping to create economic and social stability.

AUSTRALIAN GOVERNMENT INVESTMENT IN INCUBATION

Australian state governments began to invest in the creation of business incubators in the middle to late 1980s in Western Australia, the Australian Capital Territory, New South Wales and Queensland. The Federal Government became involved in 1991 with the creation of a funding scheme to create community based, not for profit business incubators. The Business Incubator Scheme originated in the Department of Employment with its main focus to assist in the creation of jobs (ANZABI, 2004).

Over 15 years, some $50 million was invested by the Federal Government in the creation of business incubators. Business incubators were established in all parts of Australia, from inner city areas in the major capital cities to very small communities in regional and remote Australia (ANZABI, 2004).

Over this period, Australia saw three generations of approaches to business incubation (see Table 2.3).

Table 2.3: Generations of business incubator operational development (Lalkaka, 2003).

Generation	Determinant
1st Generation	Real estate focus with only reactive and limited business support services
2nd Generation	1st generation plus a pro-active business development program
3rd Generation	1st and 2nd generation plus in-house debt/equity finance for clients or clear channels to finance

The experience in Australia has been that incubators quickly moved from operating as a 1st generation business incubator to a 2nd generation incubator. Those incubators that did not make the transition in operations are seen by the industry as not exhibiting best practices as a business incubator (ANZABI, 2004).

Australia did make an attempt to create what is described by Lalkaka (2003) as 3rd generation business incubation, with the establishment of the Building IT Strengths (BITS) incubator funding scheme in 2001, which was specifically a technology business incubation program. The program was created with funding from the partial sale of Telstra by the Federal Government, and was used to create 10 technology business incubators around the country, funded with $85 million dollars from 2001 to 2004. The

aim of the program was to assist in the creation of technology start-ups in Australia, ensuring that Australian innovation and ideas remained in Australia (Allen Consulting Group, 2003).

The BITS program took a different approach to the Department of Employment's 1991 Business Incubator Scheme, in that eight of the 10 incubators created were for-profit legal structures and not all provided office space; some conducted so-called 'virtual incubation' in which the incubator provided management advice and assistance without office space (Allen Consulting Group, 2003).

A 2003 evaluation of the program found incubator performance was generally strong and incubatees rated the program well. Other key findings were that:

- The BITS and Intelligent Island Incubator Programs were uniquely positioned to assist start-up businesses and provided broad-based support not available through any other government assistance program (Finding 6);
- The programs had produced hundreds of start-up ICT managers who had undergone processes that equipped them to grow their business to the point of achieving self-sustaining growth in revenues, while also creating a pool of skilled individuals (Finding 7); and
- While incubators had performed well in terms of the objectives of the programs, without a further period of assistance "it is probable that most of the Incubators will not be viable and a number of promising Incubatees currently receiving assistance will fail" (Finding 10).

  (Allen Consulting Group, 2003, pp. 81-90)

Despite these positive findings, there has been a noted decline in government-backed business incubation in Australia. The government funding of the BITS program was originally due for completion in 2003-04, but early evaluation found that additional longer-term investment would be required to prevent incubators collapsing. As a result, a second round of funding was invested only in the better performing incubators (DCITA, 2005).

The program was eventually discontinued in 2008 (BIIA, 2008) with one of the critical factors in the demise of the program reported to be the "burn rate" of government funding by the BITS incubators, without replacement income being generated from incubated companies. Lerner (2010) related the problems of the BITS incubators to two key problems identified in other nations where governments have played the role of business catalyst but have failed to succeed: firstly that governments can allocate funds in an inept or counterproductive manner and secondly that private- and public-sector organize to capture subsidies that should be directed to new entrepreneurs. In the BITS case:

"The incubators taking part in Australia's 1999 … program frequently captured the lion's share of the subsidies aimed toward entrepreneurs, by forcing the young firms to purchase their own overpriced services." (Lerner, 2010, p. 259).

In effect a small intermediary industry sprung up to 'facilitate' the spending of government funds, which comprised of opportunistic organisations with sufficient capacity and foresight to apply for these grants. While the individual businesses did receive some trickle-down benefits, the bigger winners were the business incubation intermediaries.

The end of the BITS program effectively marked the last large-scale venture by Australian governments into incubation. Today, there is no accurate data regarding the number of operating business incubators in Australia or the number of current tenants or graduated businesses, however the peak body for business incubation, Business Innovation and Incubation Australia (BIIA) reports that there are approximately 80 organisations that identify themselves as government-sponsored business incubators in Australia and approximately 1,200 incubator tenants (Burnett, 2009).

Other types of business incubators also operate in Australia, such as private sector incubators, regional incubators, university incubators, internal corporate incubators and virtual incubators, as described by von Zedtwitz (2003). However, as found by Burnett (2009), while there is occasionally self-reported information from the incubators themselves, empirical data on these incubators in Australia and overseas is unobtainable, as there is no public reporting requirement of their operations or performance and little academic research has been able to be conducted (von Zedtwitz, 2003).

As government has retreated from incubation, the private sector and tertiary sector have stepped forward and it can be seen that two of the three movements identified by the

NBIA (the desire to facilitate innovation and entrepreneurship in universities and the private sector's desire to find new paths for investment and commercialise emerging technologies) have been at work. For businesses that do not immediately fit the university incubation model of innovation and new technology businesses, nor the venture capital model of high growth, high return investment opportunities, there appears to be a gap in incubation offerings. This study will attempt to establish whether there is still a benefit in incubation services outside the relatively narrow technology, innovation and commercialisation focus and whether this is an area in which, were governments were to re-enter the incubation sector, that incubation could be reinvigorated.

INFLUENCE OF UNIVERSITY-LINKED BUSINESS INCUBATORS ON NEW ENTERPRISES

In recent years, considerable effort has been undertaken to examine university linked business incubators, in light of their proliferation. In the US, in 1992, 80 universities had set up business incubators (Mian, 1996). By 2012, the NBIA estimated a third of America's 1,250 incubators (or approximately 400) were sponsored by an academic institution (Knopp, 2012).

For the most part, literature on university business incubators has focused on those that are very engaged with the transfer of knowledge and commercialisation of research (George, Zahra, & Wood Jr, 2002; Hisrich & Smilor, 1988; R. McAdam, Keogh, Galbraith, & Laurie, 2005; Mian, 1996; Phillips, 2002).

As Mian (1994) found, there are two main elements that are usually but not always present in university incubators: typical incubator services which include shared office services, business assistance, access to capital, business networks, and rent breaks, and university-related services including faculty consultants, student employees, related R&D activity and technology transfer programs (Mian, 1994).

HOW THE INDUSTRY DEFINES, MEASURES AND EXPLAINS SUCCESS

As can be seen in the literature, there are varying forms of business incubators that aim to achieve the different goals set by stakeholders. There is a great degree of variation in the effectiveness of different incubator examples, even when the goals are common. So if business incubators are created by stakeholders to address a series of concerns or issues in a community or economy, it is important to know a) when the goals have been achieved, b) what must an incubator do to succeed and c) what separates success from failure. What is needed to achieve this is measurement, as the aphorism says: what cannot be measured cannot be managed and evaluated.

Much of what has been written on measuring the performance or effectiveness of business incubation has focussed on the business incubators themselves, and not on the process of business incubation (Hackett & Dilts, 2008). This led Hackett and Dilts (2008) to describe business incubators as a 'black box', in the sense that the internal workings are a mystery, and the investigation of the process of business incubation necessitated going inside that black box (Hackett & Dilts, 2008). One of the reasons for the limited examination of the second area is that business incubation is both a place and a process (Voisey, Gornall, Jones, & Thomas, 2006) and these two ideas are often mixed and confused.

The outcomes achieved by business incubators are also rarely explored and many authors make the statement that the value or effect of business incubators is difficult to measure (Bearse, 1998; Erlewine, 2007; NAEC, 2004; Voisey, et al., 2006). The traditional model for measuring success of any enterprise is to read the profit and loss statement, however, the majority of business incubators are not-for-profit entities (Hackett & Dilts, 2004b) and thus this method of judging success is not the only appropriate measure.

To begin to answer the questions regarding business incubator performance, it is important to look at not only the academic research on incubation but at the industry and trade literature as well. The report, *Benchmarking Incubators: background report for the Entrepreneurship Index 2004* suggests two ways of determining business incubator success: assessing the share of sustainable enterprises and measuring their contributions to regional wealth. However, the report acknowledges the simplicity of counting the number of graduating businesses from an incubator, and the inherent difficulties of measuring the impact of the wealth created by those companies (NAEC, 2004).

Part of the problem is the blurring of what is being measured. Is it the incubator itself – the organisation and its management – or is it the output of the incubator? This distinction is not often clear. As an example, a review of existing technology business incubators operating in the Central Eastern region of Europe and the Commonwealth of Independent States by Sipos and Szabo (2006) proposed a set of what they term eight factors of business incubator success. They suggest measuring the incubator's survival, its finance, its stability, its management team and services, the infrastructure and funding, political and regional effects, but they also include the success of tenants as a core measure. In other words, the incubator's performance is tied to the incubator tenant's performance, for better or worse (Sipos & Szabo, 2006).

The success of the incubator itself can be viewed as a slightly different issue, and is addressed by the incubator industry looking to develop best-practice performance in the process of incubation rather than looking at incubation outcomes. In a research paper considering the internationally regarded Austin Technology Incubator at Georgia Tech, Wiggins and Gibson (2003) developed a list of five factors that should be in place for a business incubator to succeed:

1. Establish clear metrics for success;
2. Provide entrepreneurial leadership;
3. Develop and deliver value-added services to member companies;
4. Develop a rational new-company selection process; and
5. Ensure that member companies gain access to necessary human and financial resources.
   (Wiggins and Gibson, 2003, p.56)

Although the first criteria requires measures of success be developed, the remaining four factors proposed by Wiggins and Gibson are determined less by metrics, but more in the presence or absence of the factor.

Hackett and Dilts (2004) postulate that there are a number of key factors through which incubators contribute to incubator tenant's success: providing dynamic, proactive feedback to tenants; assisting tenants with business planning; and encouraging incubatees to develop control systems during the early stage of tenant's development.

As an industry body, the NBIA assists the business incubator industry in the United States to improve its practices and performance (Erlewine, 2007). The NBIA has identified two principles that it says characterise effective business incubation:

1. The incubator aspires to have a positive impact on its community's economic health by maximising the success of emerging companies.
2. The incubator itself is a dynamic model of a sustainable, efficient business operation.

Within those characteristics, though, the NBIA goes further and says there are styles of management that distinguish model business incubation programs and their commitment to incorporate incubator industry best practices. It says that management and boards of incubators should strive to: commit to the two core principles of business incubation, define its role and goals, plan for financial sustainability, recruit capable and appropriate staff able to achieve the goals, have an effective board, develop a physical facility that is able to achieve the goals, integrate the incubator into broader community economic development activities, develop a network of supporters for the incubator and the tenants and maintain records to all evaluate the operations of the incubator.

Early efforts attempted to improve measurement tools available to incubators. For example, the NBIA has completed considerable work in the area of benchmarking performance of business incubators, in order to improve incubator performance and promote business incubation to stakeholders (Bearse, 1998). Since then, building on its two statements of what the NBIA believes makes an incubator work (as described above), the NBIA recommends to its members that they measure ten basic metrics over time to determine the success of a business incubator. The NBIA believes that these metrics should be collected on an annual basis for all current clients and for graduates for at least five years after they leave the incubator. These are (Erlewine, 2007):

- Number of clients in the incubator
- Total number of graduates since the beginning of the incubator
- Number of graduate firms still in business (or have been merged or acquired)
- Number of people currently employed full-time by current clients and graduate firms

- Number of people currently employed part-time by current clients and graduate firms
- Current monthly salaries and wages paid by client and graduate firms
- Gross revenues for the most recent full year for client and graduate firms
- Dollar amount of debt capital raised in the most recent full year for client and graduate firms
- Dollar amount of equity capital raised in the most recent full year for client and graduate firms
- Dollar amount of government grant funds raised in the most recent full year for client and graduate firms.
  (Erlewine, 2007, p.12)

The NBIA members themselves acknowledge that some of these measures are difficult to obtain, in particular financial measures from current and former tenants. However, their argument is that these are the benchmarks that stakeholders and funders of business incubation programs require to determine if their money is achieving the stated goals of the incubation program they support.

The NBIA also suggests additional criteria that can be used to track the success of general-purpose incubators, but there are specific measures that could be useful for technology business incubators. The NBIA suggests technology business incubators or incubators affiliated to a university should measure the following additional metrics (Erlewine, 2007):

- Number of technologies commercialised into new products or services by clients and graduate firms
- Number of student, faculty and staff-initiated businesses
- Number of students employed by incubator clients and graduates
- Number of students securing internships at client and graduate firms
- Number of university graduates permanently employed in client and graduate firms
- Royalty and licensing revenues gained by sponsor from client and graduate firms
- Equity investment returns gained by sponsor from client and graduate firms.
  (Erlewine, 2007, p.12)

Once again, the NBIA acknowledges the difficulty in obtaining some of these measures from current and former tenants. The NBIA notes that few business incubators in the United States measure success in any way at all, however its public position is that for the industry to promote its benefits to stakeholders, including entrepreneurs, that measurement is essential. However, no clear data may ever be produced that indicate the value of business incubation to the community.

There have been some efforts in Australia to try to increase measurement of incubation outcomes as well, such as in the 2004 Incubation Works report for AusIndustry, however these have tended to be qualitative measures such as case studies or limited measures such as the number of graduates from an incubator, that are difficult to compare across the industry. One of the few formal measures of the outcomes of technology business incubation in Australia comes from the BITS technology incubation program. While the program never publicly reported its final figures, in 2004-05 it made the following figures available.

- 640 new applications (in 2004-05), bringing the total applications under the BITS Incubator Program to that date to 4865 (2001 – 2005);
- 32 ICT companies accepted into the BITS program as incubatees, bringing the total to 376;
- 35 incubatees completing agreed business milestones to become graduate incubatees, for a total of 223;
- $42 million raised in private co-investment for their incubatee companies, bringing the five year total over both programs to more than $169 million; and
- Incubatees assisted in winning more than $14 million in government grants, bringing the five year total over both programs to more than $38 million.
- In 2004–05, $22.9 million in exports were reported by incubatees, bringing the total to over $42 million.
- In 2004–05, incubators reported the annual revenue of incubatees had increased by $43.2 million to $72.2 million.
- In 2004–05, incubators attracted over $7.1 million in cash and in-kind contributions to support their incubator operations, for a total of $34.8 million.

(DCITA, 2006, p. 2)

As with any use of government funding to create a program, the requirement to measure success is an important one. Efforts in other parts of the world have shown that success is more than just the number of businesses that graduate from an incubator. Instead, a comprehensive set of measures requires other standards to judge success. It does not matter how strong or compelling the measures are, however, if they are not used and measurement is still irregularly practiced (Monkman, 2010).

Business incubation is a complex process with multiple actors and actions involving business owners, managers of incubators, funders of incubation programs, community organisations, business mentors and finance companies, and as such defies simple attempts to model it or measure its success (Bearse, 1998, p. 48; Bollingtoft & Ulhøi, 2005). Because of this, most incubator research is atheoretical (Hackett & Dilts, 2004b; Mian, 1994).

SECTION SUMMARY

Australia was an early adopter of business incubation; however interest by governments in funding incubation projects has waned, even as additional attention has been paid overseas to the use of incubation as a job creation and economic stimulus catalyst. In the US particularly, the NBIA has been active in promoting incubation as a relatively low-cost method of fostering new job creation, with incubators providing up to 20 times the jobs of community infrastructure projects at a lower federal cost per job.

When measuring the impact of incubators, job creation is one metric but there are many others. In the case of university business incubators, key performance indicators frequently concentrate on the translation or commercialization of research, using measures such as patents registered, papers published or licences issued. For non-university linked incubators other performance indicators include number of clients, number of graduates, survival of graduates, employees of clients and graduates, salaries and wages, debt capital or equity capital raises, government funds received and jobs created.

While the incubator in this case study has a university link, the alliance is not as strong as that usually seen in the academic literature. This is mostly due to a change in management structure that has only recently opened the door to closer university interaction. Given this, many of the findings from the field of university incubation literature are less applicable than they would be in a high-touch, strong university linkage incubator and a number of metrics that could usually be applied to a university business incubator have not been available.

SECTION THREE: THEORIES APPLIED TO EXPLAIN INCUBATION PROCESS, OUTCOMES AND SUCCESS

Numerous theories have been advanced to explain the processes and outcomes of incubation, however many are drawn from outside incubation literature and could equally apply to other economic development activities. There is no true consensus on the theoretical approach that best explains incubation, but the following section considers the major approaches that have been taken and their strengths and weaknesses against the framework of this particular study. Theories are listed in the rough order of acceptance within the incubation literature.

REAL OPTIONS DRIVEN THEORY

An attempt to develop a theory of business incubation was made by Hackett and Dilts (2004b), who applied real options-driven theory to incubation after abandoning a range of alternative theories that could bear some relationship to business incubation, including agency theory (Ross, 1973), dynamics capability theory (Teece, Pisano, & Shuen, 1997), scaffolding theory (Bruner, 1966) and structuration theory (Giddens, 1984). Hackett and Dilts concluded that real options-driven theory was most applicable to the process of business incubation, utilising Rosenberger's (2003) description that a real option is "created through an initial investment decision followed by subsequent investment decision(s)" (Hackett & Dilts, 2004a, p. 47). The authors further describe the process of option creation and exercise as being impacted by five factors; uncertainty, asset value, irreversibility, exercise costs and competition. In an incubator context:

> "… a real options perspective would view incubatee selection as the creation of an option, and subsequent resource infusions and monitoring and assistance as option exercises." (Hackett & Dilts, 2004a, p. 47).

Hackett and Dilts (2004b p. 48) argue the theory offers the "best available lens for capturing the operational setting and underlying logic that drives the incubation process of selection, monitoring and assistance, and resource infusion vis-à-vis incubatees"

(Hackett & Dilts, 2004a, p. 48). They then use the options theory to build a specific theory of business incubation, which is described as:

> "Business incubation performance - measured in terms of incubatee growth and financial performance at the time of the incubator exit - is a function of the incubator's ability, development capabilities and resources, to create options through the selection of weak-but-promising intermediate potential firms for admission to the incubator, and to exercise those options through mentoring and counselling, and the infusion of the resources while containing the cost of potential terminal option failure." (Hackett & Dilts, 2004a, p.48)

They further provide a function that can be expressed as

BIP = (SP+$M\&BAI$+RM)

Where

BIP = business incubation performance

SP = selection performance

M&BAI = monitoring and business assistance intensity and

RM = resource munificence

(Hackett & Dilts, 2004a, p. 48)

In other words, the authors argue the performance success of a business incubator is a product of three factors: the selection of the correct tenants, the quality of the incubator assistance and the level of financial resources to deliver services to tenants. The difficulty with this theory is that although arguably applicable to the performance of an individual incubator or organisation, it sheds little light on the performance of a group of incubators on a regional economy or the wider incubation process itself. Hackett raised questions about the model soon after its development, which also weakens its usefulness in judging performance.

Hackett (2004) tested the real options theory and a model developed from his earlier work against data from 53 United States incubators but found the model failed to predict incubation outcomes. He argues "the failure of the model to predict outcomes points to the existence of a gap in the theory that has been developed" (Hackett, 2004, p. 7), and that

other variables were likely to be at work. Hackett concludes that questions remain over what accounts for the variation of business incubation outcomes and high incubatee survival rates.

NETWORK THEORY

An alternative theory of business incubation focuses on the function of networking and social interaction in incubators, using either the term social capital theory or social network theory, with Bollingtoft & Ulhøi (2005) noting that 'social capital theory' and 'network theory' are used synonymously (Bollingtoft & Ulhøi, 2005, p. 272). The authors use this theory to describe the performance of business incubation, saying it is:

> "…being composed of individual and collective social networks, ties and structures that help the individual get access to information and know-how." (Bollingtoft & Ulhøi, 2005, p. 273)

They argue that social ties can be considered to be strong or weak, and that weak ties have been associated with idea generation, while strong ties have been associated with problem solving (Bollingtoft & Ulhøi, 2005). Their paper ultimately makes the case that the operations and performance of a business incubator can be seen through the lens of this theory, and that the amount of social capital surrounding the incubator tenant is an indicator of success (Bollingtoft & Ulhøi, 2005). Social network theory has the advantage of acknowledging the role of social dimensions within economic relationships (Scott, 2000) and Bollingtoft & Ulhøi (2005) argue that in an incubator, the social networks are fostered through the connections made between entrepreneurial firms and a diverse range of other community resources (Bollingtoft & Ulhøi, 2005).

This theoretical field builds on the work of Aldrich and Zimmer (1986) who apply four aspects of social network theory to the study of entrepreneurship. Firstly, they say that delineating group boundaries and identity fosters social ties within the group that increase entrepreneurialism. Secondly, the better connections developed between individuals and information brokers spread information and resources. Thirdly, developing social networks broadens an individual's opportunities. Finally, they argue that increasing ties with others who have significant social resources will also boost

entrepreneurial opportunities (Aldrich & Zimmer, 1986). Other authors have also found social network theory a useful framework, as it recognises that business incubation does not just occur within the walls of a business incubator, but also outside the incubator in the local community (Hackett & Dilts, 2004b). It also identifies the role of an incubator in developing the entrepreneur's network in respect to gaining access to knowledge and resources in order to support entrepreneurial growth (L. Peters, M. Rice, & M. Sundararajan, 2004).

While social network theory offers a stronger framework for examination of business incubation than Hackett & Dilts (2004a) real options theory, both are limited in that they tend to be used to examine individual incubator operations, rather than considering incubation as a framework to address economic development.

INTERDEPENDENT CO-PRODUCTION MODELLING

Rice, 2002, describes the relationship between business incubation programs and entrepreneurial firms as interdependent co-production, using an equation developed by Parks et al. (1981, cited in Rice, 2002) to indicate success. The equation is

$Q=cRP^{d}CP^{e}$, Where :

Q = output

RP = regular producer inputs

CP = consumer producer inputs

c = a scaling factor and

d/e = respective elasticities of each input (Rice, 2002, p.165)

Rice (2002) finds incubator managers with greater impact invest more hours in co-production and more time on average in each interaction. They also engage in a broad range of activities, including proactive intervention, rather than reactive changes to a client's short-term problem or crisis. These interventions were also most effective when entrepreneurs exhibited readiness to engage in co-production.

The benefit of this particular theoretical model, as described by Hackett & Dilts 2004a, is that it looks at the intensity of business assistance intervention and argues that the incubator manager must allocate them strategically. The incubatee must also be prepared to learn and use the advice. The idea is important in understanding incubation success as it puts emphasis on the importance of advice and advisor rather than physical incubator itself (Hackett & Dilts, 2004).

STRUCTURAL CONTINGENCY THEORY

Structural contingency theory posits that the configuration of an organisation and the external environment must be appropriate to the target group in order to achieve success. Ketchen, Thomas and Snow (1993) considered the organisational structure of organisations within the hospital industry to determine how the structure would influence the success of different forms of participant looking to build opportunity. The researchers initially hypothesized that those environments in which there was low munificence (or low resource-carrying capacity), high dynamism and high complexity would represent the best possibility for success of entrepreneurs, who pursue new opportunities in a narrow domain, rather than other forms of worker. The results, though, found that both entrepreneurs and prospectors, which they defined as those looking for new opportunities in a broad domain, succeeded in this form of environment (Ketchen et al. 1993). Both groups did better than those trying to exploit existing opportunities in a narrow or broad domain. Ketchen et al's (1993) findings have frequently been translated to the incubation environment, reflecting the high dynamism and complexity of incubators and the search by individuals for new opportunities. There are some useful parallels, such as the comparative advantage experienced by those seeking new opportunity rather than exploiting existing opportunities, and Hackett & Dilts, (2004), argue that structural contingency theory provides a theoretical basis for the need for incubators to be tailored to local conditions. Lish (2012) sees structural contingency theory as explaining the growth of specific and specialised incubators and those grounded in a geographic region of expertise.

MARKET FAILURE THEORY

Hackett & Dilts (2004) addressed the application of market failure theory to business incubation, describing market failure as occurring when competition for the production and sale of goods or ideas fails to produce a desired outcome — in this cases, the creation and development of new enterprises. The researchers argue that imperfect information, monopolies and other externalities can impede the development of new firms, and that incubators can be one approach to addressing market failures. Hannon (2004) provides more specific application of this theory, by distinguishing between different forms of incubators — specifically accelerators, that work with high-growth and high potential ventures, and germinators, that work with early-stage firms. He argues that facilities operating in areas of market failure are primarily those working with new rather than high-potential ventures (Hannon, 2004). While this theory goes some way to explaining the role of incubators, it does little in explaining the processes operating inside the walls.

ENTREPRENEURSHIP THEORY

Entrepreneurship theory, as described by Bull and Willard (1993), seeks to explain how and when an entrepreneur might engage in entrepreneurship, with the authors arguing:

> "A new combination, causing discontinuity, will be created, i.e., entrepreneurship will occur, under conditions of:
>
> Task-related motivation (some vision or sense of social value embedded in the basic task itself that motivates the initiator to act), and
>
> Expertise (present know-how plus confidence to be able to obtain know-how needed in the future), and
>
> Expectation of gain for self (economic and/or psychic benefits), and
>
> A supportive environment (conditions that either provide comfort and support to the new endeavour, or that reduce discomfort from a previous endeavour)." (Bull and Willard, (1993, p. 7)

Bull and Willard (1993) argue incubators assist entrepreneurs in developing credibility, the acceptance into a successful program suggests the firm has been vetted as having potential, and that the incubator can shorten the time needed to learn the essentials of operating a successful business.

Baron and Shane (2008) describe the process as of entrepreneurship as including five steps starting with the idea for a new product or service, progressing from the decision to proceed to the assembly of resources, the actual launch of the venture and finally the building of a successful business. This process was applied by Peters et al (2004) in a model to test how incubators influenced the entrepreneurial process, by examining the services offered (infrastructure, coaching and networks) and comparing the level of services offered at different incubators with graduation rates. While they concluded that incubators facilitated entrepreneurship, they acknowledged studying graduation rates alone did not sufficiently explain how entrepreneurship was being fostered.

COMMUNITIES OF PRACTICE THEORY

One theory referred to by several authors is communities of practice theory, generally attributed to Lave and Wenger (1991) and in the later work by Wenger (1998), in which is described the idea that learning or the acquisition of knowledge occurs in a social context, in that knowledge is shared amongst members of a group. Lave and Wenger combined three elements to define a community of practice: members identify as a community; there is activity and interaction between members of the community; and there are common resources, such as language (i.e. technical terms), routines, tools and stories (Lave & Wenger, 1991; Wenger, 1998). Wenger (1998) also suggested that communities of practice develop around an area of interest that matters to the individuals involved, something that gives members a sense of joint enterprise and identity.

RESOURCE-ADVANTAGE THEORY

Lish (2012) applied Resource-Advantage Theory of Competition, developed by Hunt and Morgan, 1995, to incubation, arguing that the theory's description of competition in evolutionary and survival terms is applicable to the supply of resources in incubation.

Given the competition of ventures for entry to incubators, for customers within markets and for advantage over other firms, Lish (2012) sees the theory as encompassing the entire process of incubation.

SUMMARY OF THEORETICAL APPROACHES

As can be seen from this section, numerous theories have been advanced to explain the processes and outcomes of incubation, however many are drawn from outside incubation literature and could equally apply to other economic development activities or entrepreneurship (Hackett & Dilts, 2004b; Lish, 2012). The significant number of geographical, political and contextual differences that might be factors in considering incubation on a macro scale has led some researchers to argue that there is no one theoretical model that can be applied to business incubation (Bollingtoft & Ulhøi, 2005; Burnett, 2009; Hackett & Dilts, 2004ab). While Hackett & Dilts, 2004b, attempted to develop an incubation-specific theory after discarding other theoretical approaches, other work has focused on network theory (Bollingtoft & Ulhøi, 2005), structural contingency theory (Ketchen Jr, Thomas, & Snow, 1993), interdependent co-production modelling (Rice, 2002), market failure theory (Hannon, 2004), entrepreneurship theory (Bull & Willard, 1993; Peters et al, 2004), communities of practice (Lave & Wenger, 1991), and resource-advantage theory of competition (Lish, 2012).

This study will draw on three key theories advanced in this field: the theory of incubation developed by Hackett & Dilts, 2004b, network theory and interdependent co-production modelling as proposed by Rice, 2002, and will also discuss the findings in light of other theoretical frameworks that may be relevant.

SUMMARY OF THE LITERATURE REVIEW

To summarise the literature reviewed for determining the research parameters of this study, it can be seen that small businesses are not just larger versions of large businesses; they operate in a different manner and within a different context to large businesses.

Understanding small businesses is in itself an important research area of business and would lead to improved economic and social outcomes. The importance of small business to an economy also cannot be underestimated, with more than 96% of all registered businesses in Australia considered to be small businesses.

Due to the economic and social importance of small businesses to a country, governments have attempted to find ways to assist their creation, growth and survival. One of tools used to achieve a variety of economic and social goals has been business incubation Business incubation is an international practice that has undergone many changes since first created more than 50 years ago. Business incubators developed in three phases, the first was to fill vacant real estate, the second to facility innovation and entrepreneurship in universities and the third phase developed from the private sector's desire for investment and to commercialise new and emerging technologies. In more than 100 countries, governments have established business incubation programs to assist the creation and development of small businesses.

What has not changed over the past 50 years is the focus of business incubation, which is on developing young businesses and graduating them from the incubator facility. Incubators seek to provide business assistance to early stage companies and bring these tenanted businesses to economic self-sufficiency so that they can graduate from the incubator facility.

The definition of what is and what is not a business incubator can thus be applied both narrowly and broadly. A broad view can extend to science parks, university commercialisation programs and other assistance, but a more narrow view looks specifically at the facility, assistance, mediation, provision of services and nature of policies around businesses that engage in incubation.

Australia was an early adopter of business incubation, with programs established in a number of states in the middle to late 1980s. Australia, as did other countries, developed methods of business incubation that were appropriate to its conditions and altered aspects of service delivery to tenants to suit the particular economic needs of the communities in which incubators were situated. Australia also created a technology business incubation program that was closed due to poor implementation and operations that lead to poor outcomes. Local interest has since declined with the closure of big government-funded projects, at a time when international interest in technology business

incubation is increasing. In the US particularly, the NBIA has been active in promoting incubation as a relatively low-cost method of fostering new job creation, with incubators providing up to 20 times the jobs of community infrastructure projects at a lower federal cost per job.

The Australian experience of incubation was complicated by the discontinuation of a Federally back program that was criticised for the 'burn rate' of government funds and the absorption of funding by incubator management rather than the businesses that needed support. While not a unique problem, the program has not been revived in the years since and its cancellation effectively spelled the end of any significant Australian government investment in incubation. This has left Australia lagging behind some other nations, including those in Europe and Asia, where incubation has been an area of considerable investment in recent years.

The trade and industry literature is extensive around the factors that make incubation successful and in developing metrics to measure and evaluation this impact. The academic literature has also sought to unravel this issue as well, albeit from a more rigorous perspective. Many academic authors have attempted to describe a theory of business incubation, with little success at identifying a clear theory of incubation. Industry authors and researches have instead focussed on the practical aspects of business incubation, the type and quality of services offered to tenants, and the results produced to stakeholders as a way to describe incubation and to measure its success.

The proposed study will seek to review the application of a number of the existing theories on completion of the case study research. It is expected that the knowledge gained in the research will provide data that may allow the selection (or development) of theoretical concepts that better describe business incubation. This approach aims to add to the theoretical knowledge regarding business incubation yet acknowledges that the task of resolving this issue may prove too complex for resolution within the confines of this research.

CHAPTER 3 – METHODOLOGY

INTRODUCTION

This chapter describes the basis for the decisions made in determining the research methodology and provides justification for the methodology chosen. The chapter provides the background for the study, including previous research in this field and how it has been conducted, establishes the justification for the methodology used, describing the research questions that the study is addressing, and outlines the process undertaken to conduct the study. The chapter includes a discussion of case study method and data collection, research design, the formation of interview questions and questionnaires, the use of semi-structured interviews and analysis techniques employed. In addition, the limitations of the study and ethical procedures adopted during the research are outlined (see figure 3.1). The remainder of the chapter will follow the sections as outlined in figure 3.1.

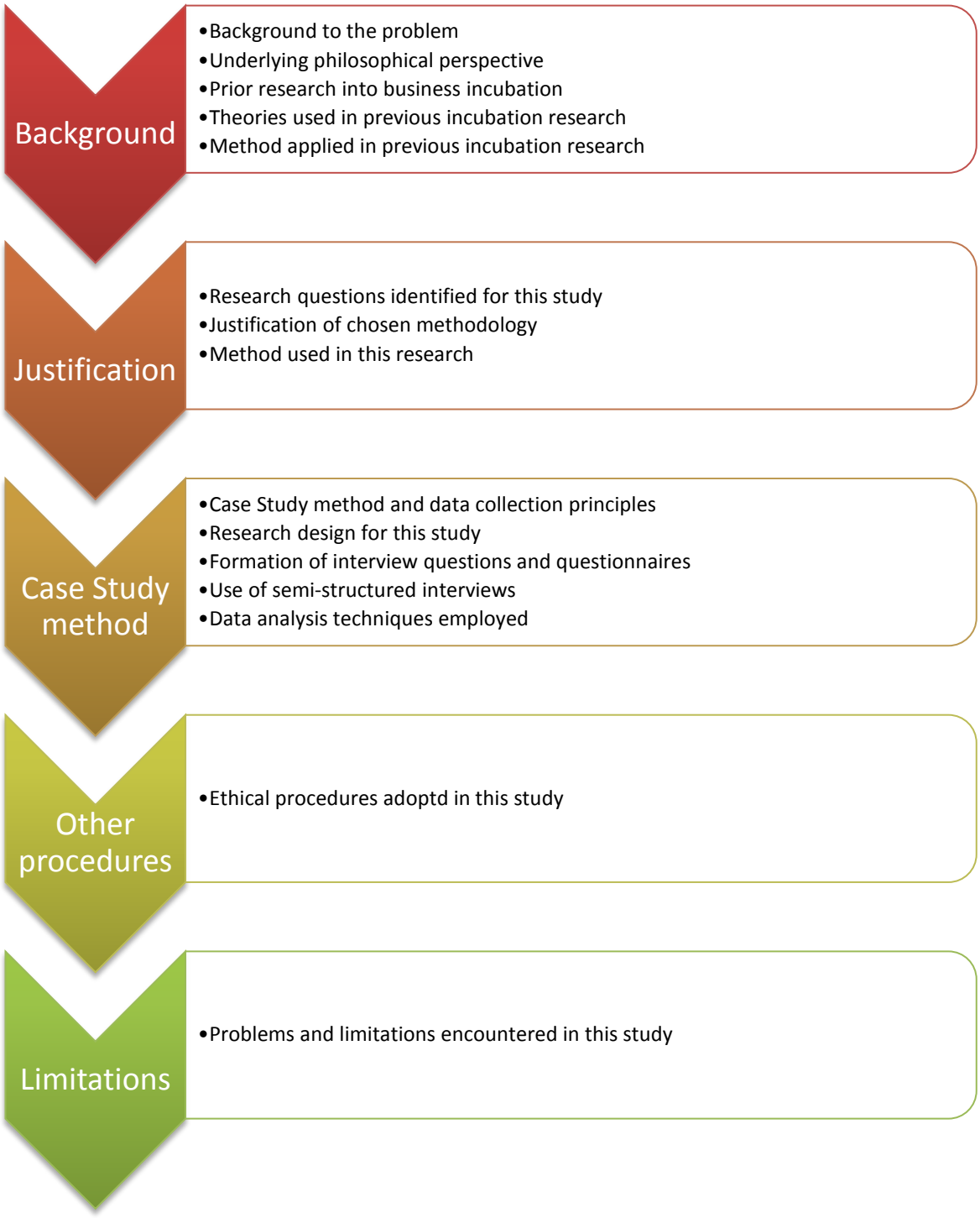

Figure 3.1: Outline of the sections included in Chapter 3

BACKGROUND

BACKGROUND TO THE PROBLEM

Governments invest public monies in programs to assist small to medium enterprises (SMEs) to create a variety of outcomes, including jobs, growth in number of SMEs, additional competition and increased wealth (Atherton & Hannon, 2006; Barrow, 2001; Storey, 1996). Business incubation is one of the tools that governments use and fund to assist in the development of small to medium enterprises.

Australia was an early adopter of business incubation, and invested substantially in technology business incubation in the early 2000s (ANZABI, 2004). However, local interest has declined in incubation with the closure of several big government-funded projects, at a time when international interest in technology business incubation is increasing (Harman, 2009).

There appears to be a sense that business incubation is something that has been done and does not need to be done again in Australia, even as most members of the Organisation for Economic Co-operation and Development (OECD) are looking to business incubation to assist in the development and commercialisation of research from universities and to aid economic development and job creation (Fishback, 2009).

There is particular attention overseas in business incubators and their usefulness in economic development, which suggests there is a value in revisiting incubation and exploring how business incubation could be reinvigorated in Australia, particularly as debate continues regarding how the country will develop economically outside the resources sector.

This section will first consider the underlying philosophical perspectives of the research, consider specific examples of business incubation research that have been undertaken in the past, problems identified with those studies and business incubation research in general, and the methods used in business incubation research.

UNDERLYING PHILOSOPHICAL PERSPECTIVE

Researchers operate within a scientific paradigm that is either explicit or implicit. A paradigm is an overall conceptual framework within which a researcher may work; that is, a paradigm can be regarded as the "basic belief system or worldview that guides the investigator" (Guba & Lincoln, 1994, p. 105).

Philosophical assumptions which support four different paradigms of social science put forward by Denzin and Lincoln (1994) relating to ontology, epistemology and methodology, are summarised in Table 3.1. In a more simplified manner, ontology is 'reality', epistemology is the relationship between that reality and the researcher and methodology is the technique used by the researcher to discover that reality.

Table 3.1: Basic beliefs of alternative inquiry paradigms (Denzin & Lincoln, 1994)

Item	Positivism	Postpositivism	Critical Theory *et al*	Constructivism
Ontology	Naïve realism – "real" reality but apprehendable	Critical realism – "real" reality but only imperfectly and probabilistically apprehendable	Historical realism – virtual reality shaped by social, political, cultural, economic, ethnic and gender values, crystallised over time	Relativism – local and specific constructed realities
Epistemology	Dualist/ objectivist; findings true	Modified dualist/objectivist; critical tradition/ community; finding probably true	Transactional/subjectivist; value-mediated findings	Transactional/ subjectivist; created findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/dialectical	Hermeneutical/ dialectical

Table 3.2 was adapted by later authors to develop the methodology options under each paradigm and to better distinguish the differences between paradigms. Perry, Alizadeh and Riege (1997) clarified the methodology described by Denizen and Lincoln (1994), providing a clearer basis for researchers seeking to design studies within a particular paradigm.

Table 3.2: Extended consideration of alternative inquiry paradigms

Item	Positivism	Critical Theory	Constructivism	Realism
Ontology	*naïve realism:* reality is real and apprehensible	historical realism: "virtual" reality shaped by social, economic, ethnic, political, cultural, and gender values, crystallised over time	*critical relativism:* multiple local and specific "constructed" realities	critical realism: reality is "real" but only imperfectly and probabilistically apprehensible and so triangulation from many sources is required to try to know it
Epistemology	objectivist: findings true	*subjectivist*: value mediated findings	subjectivist: created findings	*modified objectivist*: findings probably true
Methodology	*experiments/ surveys:* verification of hypotheses: chiefly quantitative methods	dialogic/dialectical: researcher is a "transformative intellectual" who changes the social world within which participants live	*hermeneutical / dialectical*: researcher is a "passionate participant" within the world being investigated	*case studies/convergent interviewing:* triangulation, interpretation of research issues by qualitative and quantitative methods such as structural equation modeling

Source: Perry, Alizadeh and Riege (1997, p. 547) based on Guba and Lincoln (1994).

The four main paradigms described by Perry et al (1997) are discussed in more detail below along with an analysis of their use in the field of business and related research. As

will be discussed in more detail later in this section, business incubation is a field with only scant use of theoretical frames, so to develop a better understanding of the applicability of research, similar fields including entrepreneurship, marketing and networking were also examined.

POSITIVISM

Using the Perry et al (1997) model above, it can be seen that the ontology of the four paradigms take different approaches to the form and nature of reality and therefore what can be known about it (Denzin & Lincoln, 1994). Realist ontology assumes that social and natural reality exists independently of the observer. Positivists separate themselves from the field of study, while researchers within other paradigms realise there must be some participation in the real world to understand and express emergent properties (Krauss, 2005).

A number of business and entrepreneurship researchers have rejected positivism as a suitable paradigm for social science phenomena that involve humans and real-life experiences as respondents can alter and adapt to a situation (C Perry, et al., 1997). In addition, there is a difference in being able to predict an outcome and explaining this outcome (Keat & Urry, 2011), which positivism can struggle to overcome and which makes it less useful than other paradigms for incubation research.

CRITICAL THEORY

Critical theory ontology relates to historical realism, or as described by Guba and Lincoln (1994), a "virtual reality shaped by social, political, cultural, economic, ethnic and gender values crystallised over time" (Guba & Lincoln, 1994, p.165). Heron (1996) adds to the definition by describing the paradigm as being shaped by historical insights. Both definitions describe the paradigm as being driven by a transformative intellectual.

Perry et al (1997) argue that critical theory researchers seek a transformative social, political or cultural position, such as through Marxism or gender values. They argue that

the paradigm is unsuited for much business research, for this reason, as the goal in most such research is predominantly to understand processes rather than alter the process for a particular social outcome (C Perry, et al., 1997).

CONSTRUCTIVISM

The naturalist or constructivist view is that knowledge is established through the meanings attached to the phenomena studied; researchers interact with the subjects of study to obtain data and the process of inquiry changes both researcher and subject. The developed knowledge is both context dependent and time dependent (Coll & Chapman, 2000; Cousins, 2002).

Guba and Lincoln (1989), argue the constructivist philosophy is idealistic, the assumption being that what is real is a construction in the minds of individuals. They assume that the researcher cannot and should not be neatly disentangled from the observed in the activity of inquiring into constructions. Constructions, they say:

> "… do not exist outside of the persons who create and hold them; they are not part of some 'objective' world that exists apart from their constructors" (Guba & Lincoln, 1989, p.143).

While Yin (1994) allows for the possibility of a constructivist approach to studies involving detailed observation and investigation — and where development of a theoretical framework before interaction with the study participants must be avoided — the paradigm is not widely used among business researchers. However, it has been used as a paradigm within the specific field of business incubation (Giones, Zhou, Miralles, & Katzy, 2012; Marlow & McAdam, 2012) but it has not been widely adopted for this purpose.

Perry, Riege and Brown (1999) argue that constructivism is of limited use within business fields. They give an example of a constructivist within the business research field as a psychologist or a researcher of organisational culture; a "passionate participant" in the organisation being examined who values meaning more than measurement. The authors argue the paradigm "is rarely appropriate for business research because the approach

excludes concerns about the clearly real economic and technological dimensions of business" (C Perry, et al., 1997, p. 1952). Alvarez and Barney (2010) note that constructionism has been seen as an alternative to what they describe as the hegemony of realist paradigms in the field of management in particular, but that it has also been widely critiqued by realists and critical realists alike.

REALISM/POSTPOSITIVISM

The final paradigm of realism is one that has been found to be useful by many researchers within the business, entrepreneurship and related research fields (Blundel, 2007; Bøllingtoft, 2007; Burnett, 2009; Easton, 2002, 2010; C Perry, et al., 1997). Critical realists assume the existence of the real world, and acknowledge through their ontology that reality can exist independent of observers (Easton, 2010, p. 120). A fundamental tenant within critical realism (sometimes called postpositivism) is that causal language can be used to describe the world (Easton, 2010), which differs to the positivist realism approach. Sayer (2000) argues critical realism acknowledges the meaning inherent in social phenomena and that the meaning is both "descriptive" and "constitutive" of the phenomenon under review. Meaning needs to be understood but cannot be measured or counted, thus leading to the interpretive or hermeneutic element of social science. He distinguishes critical realism from positivist realism, arguing that:

> " … although social science can use the same methods as natural science regarding causal explanation, it must diverge from them in using 'verstehen' or interpretative understanding" (Sayer, 2000, p. 17).

Sayer (2000) argues that unlike positivism, in which the observer is always disconnected from the subject, in realism, a double hermeneutic is created in which social scientists must enter the world of those they study in which the listener, speaker, researcher and researched are fused.

Critical realism has been considered to be a useful ontology for business research (Alvarez & Barney, 2010; Blundel, 2007; Burnett, 2009; Neergaard & Ulhøi, 2007). From a critical realist perspective, the thoughts and ideas of an entrepreneur can form a starting point for

investigation, helping to contextualise other observable entrepreneurial phenomena, according to Neergaard and Ulhøi (2007), with the potential to produce better stories that provide more complex causal explanations. Blundel (2007) argues critical realism can lead to a better understanding of how entrepreneurs exercise choice. Within entrepreneurship literature, critical realism is also used to interpret the reaction of entrepreneurs to exogenous shocks (Alvarez and Barney, 2010) while Perry, Reige and Brown (1999) argue it is valuable as a method of providing a window on to reality, through which a picture can be triangulated with other perceptions. As Perry et al (1997, p. 1952) point out:

> "Realists acknowledge the difference between the world and particular perceptions of it, and the pre-eminent importance of that world. In brief, constructivists and critical theorists consider there are many realities, while realists consider there is only one reality although several perceptions of that reality must be triangulated to obtain a better picture of it."

The critical realism paradigm has, therefore, considerable relevance to the issues under investigation in this study and has been considered the paradigm most suited to help inform understanding. Thus the research methodology draws on the approaches outlined by Brown and Erwee (2002) who incorporate the thinking of Perry and Coote (1994), Guba and Lincoln (1994) and Bonoma (1985). Thus the realism approach outlined in Table 3.3 below, has informed the design of a study that is exploratory, seeks to build theory, develops understanding of knowledge-based social experiences and seeks to understand causal relationships. The method used employs a case-study approach, open interviews, probing questions, an emphasis on the insider's perspective, semi-structured and unstructured data collection and the reliance on non-statistical triangulation of data.

Table 3.3: Comparison of realism and positivism research approaches

Dimension/item	Positivism approach	Realism approach	Constructivism/ critical theory
Research position (goal of investigation)	prescriptive, causal, deductive, theory confirming, ungrounded	exploratory, descriptive, theory building, inductive, analytical	descriptive
Direction of research inquiry	Measurement analyses of causal relationships between variables that are generalisable across time and context	development of idiographic knowledge-based social experiences such as human ideas, beliefs, perceptions, values, etc.	development of idiographic-based social knowledge experiences such as human ideas, beliefs, perceptions, values, etc.
Research strategies	experiment, survey, etc.	case study, convergent interviewing, etc.	in-depth interviews, participant observation
Methodology	outcome-oriented, verification- oriented	process-oriented, discovery-oriented	observation, process oriented
Causality	cause-effect relations	causal tendencies/ generative mechanisms	not addressed
Interview questions	mainly closed with limited probing	open with probing	very open
Judgment of research quality	external validity and reliability are critical	construct validity is important	credibility, transferability, dependability and confirmability

Sample size	Large	small	very small
Data collection	Structured	semi-structured, unstructured	unstructured
Interaction of interviewer and phenomenon	independent and value-free - a one way mirror	mutually interactive but controlled by triangulating data - an open window	passionate participant/ transformative intellectual
Respondent's perspective	emphasis on 'outsider's' perspective and being distanced from data	emphasis on the 'insider's perspective'	emphasis on 'outsider's' perspective and being distanced from data
Information per respondent	varies (specific to question)	extensive (broader question)	extensive
Type of data gathered	replicable, discrete elements, statistical	information-rich, contextual, non-statistical, somewhat subjective reality	information-rich, contextual, non-statistical, somewhat subjective reality
Hardware, software	questionnaires, statistical software programs	tape recorders, interview guides, qualitative programs, methods transcripts, software visual	tape recorders, interview guides, transcripts, qualitative software programs, visual methods
Type of data analysis	objective, value-free, statistical methods	non-statistical, triangulation	value-laden, non-statistical

Source: developed by Brown and Erwee (2002) from Perry and Coote (1994), Guba and Lincoln (1994), Bonoma (1985).

THE CHOICE OF A QUALITATIVE APPROACH

The chosen method fits within the qualitative movement that has increasingly gained acceptance in the small business and entrepreneurship research community (Perron and Ram, 2004). Neergard and Ulhøi (2006) note that there are increasing calls for qualitative research in the field, while Duxbury (2012) argues that case studies are rich in the detail needed for insightful theory building in the area of entrepreneurship. Within the field of business incubation, quantitative methods have been used to consider the overall performance of incubators (Mian, 1997, Voisey et al, 2006), but are frequently paired with additional qualitative data in order to explore the causes and underlying factors of entrepreneur and incubator performance. In addition, as Lowder (2009) notes, success in a quantitative method requires a data set large enough for a significant conclusion to be drawn. Given the limited size of this particular incubator, and the desire to analyse the factors contributing to incubator and entrepreneur performance, a predominantly qualitative approach, backed by limited quantitative data gathering, was adopted.

PRIOR RESEARCH INTO BUSINESS INCUBATION

Business incubation has been in existence for almost 50 years (and operating in Australia since the 1980s) and there have been numerous studies conducted over that period of time; however the research reflects the immature status of the field, with many studies lacking a solid theoretical framework or using poorly defined concepts and measures for factors under investigation. This section looks at the identified limitations and problems recognised by previous research into business incubation.

Mian, (1994) described a dearth of empirical evidence on what would determine best practice when it came to the management of a business incubator, what ideal policy and practices of an incubator would be and what organisational structure would be important. Hackett and Dilts' (2004b) systematic review of 38 academic business incubator articles stated that most of the research was atheoretical and that if incubator researchers wanted to move beyond a list of key critical success factors, then that research needed to be grounded in existing theory and new theory developed to explain the interactions occurring within a business incubator.

This study has been developed to provide an insight into the impact of a single, university-linked business incubator on new enterprise development using direct evidence from the users of the facility, the current tenants, and triangulating their responses by investigating the responses from former tenants and the incubator manager. In order to do this, the researcher has followed Hackett and Dilts' recommendations of grounding the research in theory and used this to help explain what happens in this particular incubator.

THEORIES IN BUSINESS INCUBATION RESEARCH

As noted above, while different theories have been applied or developed in business incubation research, there is no agreement among researchers on a single approach (Hackett & Dilts, 2004b). This section considers those theories that have been applied to business incubation research.

COMMUNITIES OF PRACTICE THEORY

One theory referred to by several authors is communities of practice theory, generally attributed to Lave and Wenger (1991) and in the later work by Wenger (1998), in which is described the idea that learning or the acquisition of knowledge occurs in a social context, in that knowledge is shared amongst members of a group. Lave and Wenger combined three elements to define a community of practice: members identify as a community; there is activity and interaction between members of the community; and there are common resources, such as language (i.e. technical terms), routines, tools and stories (Lave & Wenger, 1991; Wenger, 1998). Wenger (1998) also suggested that communities of practice develop around an area of interest that matters to the individuals involved, something that gives members a sense of joint enterprise and identity.

There have been a number of studies made of incubator practice and processes utilising communities of practice theory (Bollingtoft & Ulhøi, 2005; Fang, 2010; Hannon, 2005; L. Peters, et al., 2004). These authors used communities of practice theory to assist in

developing an understanding in how tenanted firms developed their management and business practices, with relationships between incubator management and tenant firms.

SOCIAL NETWORKING THEORY

Social networking theory has been used by researchers to examine networks among small firms (Granovetter, 1983; Hindle & Klyver, 2011; Mitchell, 1969; Shaw, 2006), including the argument that because the owner is embedded within a network and because of the network's inherent social relationships they don't tend to take decisions about their firms in isolation from the network, and that they may activate the network in times of difficulty or opportunity (Johannisson, 1988). Hindle and Klyver (2011) argue that the advantage of a network approach in examining the emergence of successful new business ventures and their creation is that it captures the processes underway by focusing on the links between units in the network (Hindle & Klyver, 2011). With this in mind the relationships and interactions between tenants and management are included in researching the business incubator.

ALTERNATE THEORIES

Hackett and Dilts (2004b) attempted to develop their own theory of business incubation due to the lack of their being any agreement amongst researches on a single approach, by applying real options-driven theory to incubation after abandoning a range of alternative theories (including agency theory, dynamics capability theory, institutional theory, scaffolding theory and structuration theory).

They concluded that real options-driven theory was most applicable to the process of business incubation, utilising Rosenberger's (2003b) description that a real option is "created through an initial investment decision followed by subsequent investment decision(s)" (Hackett & Dilts, 2004a, p. 47). Hackett and Dilts (2004b) use the options theory to build a specific theory of business incubation, which is that:

> "Business incubation performance - measured in terms of incubatee growth and financial performance at the time of the incubator exit - is a function of the incubator's ability, development capabilities and resources, to create options through the selection of weak-but-promising intermediate potential firms for admission to the incubator, and to exercise those options through mentoring and counselling, and the infusion of the resources while containing the cost of potential terminal option failure."
>
> (Hackett & Dilts, 2004a, p. 48)

While this theory may have very useful application when measuring the specific performance of the incubator, it is less applicable in this research, which seeks to establish how the incubator has assisted and developed the businesses of the individual tenants. It can be seen, then, that while different theories have been put forward to explain the interactions within business incubators, researchers have not settled on any one specific theory for all studies (as demonstrated by the number of theories considered by researchers in Table 3.4 below).

In addition, different theoretical perspectives are required for those studies that consider such different perspectives as the concept of incubation assistance and those that consider the support actually delivered. For this reason, some researchers have focused on process-oriented studies that consider the actual hands-on activities and support for SMEs, rather than configuration studies, that look more at the design or blueprint of incubator assistance (Auttio & Klofsten, 1998; Hackett & Dilts, 2004a; D. Patton, Warren, & Bream, 2009). This study seeks to use the process-oriented approach as a basis of this research, while drawing on Hackett & Dilts' work to develop a theory specific to incubator research.

Table 3.4: Theoretical perspectives considered in selected business incubation literature

Researcher	Nature of study	Theory considered
Abduh et al (2007)	Client satisfaction of business incubators	None described
Avnimelech and Teubal (2004)	Examination of high-tech clusters	Universal Darwinism
Becker and Gassmann (2006)	University business incubators	None described
Bhabra-Remedios and Cornelius (2003)	Improving business incubator research	Organisational theory Financial theory
Bøllingtoft and Ulhøi (2005)	Networked business incubators	Social capital theory Network theory
Burnett (2009)	Optimum funding levels of business incubators	Lifecycle theory Options driven theory Network theory

		Competitive advantage theory Entrepreneurship theory
Burnett and McMurray (2008)	Exploring business incubation from a family perspective	Activity theory
Clarysee et al (2005)	European business incubation strategies	None described
Cooper and Park (2008)	Impact of incubators on opportunity recognition	Entrepreneurship theory Innovation theory Modern growth theory
Fang et al (2010)	Leveraging tenant and incubator social capital	Social capital theory Network theory
Feeser and Willard (1989)	Business incubator performance	Incubator contingency theory
Grimaldi and Grandi (2005)	Business incubation models	None described

Haapasalo and Ekholm (2004)	European incubation profile	Social action theory Network theory
Hackett (2004)	The option to incubate	Real options theory Market failure theory Structural contingency theory Co-production of value theory Network theory
Hackett and Dilts (2004)	Incubation outcomes	Real options theory
Hallam and DeVora (2009)	Technology based business incubation	None described
Hannon (2003)	Learning in British business incubation	Process orientated framework
Hannon (2004)	Classification of business incubators	Organisation theory
Jin et al (2003)	Business incubators in China	Network theory

Lee and Hunt (2008)	Importance of business incubation to local economy	Grounded theory
Maville (2005)	Business incubator case study	Endogenous growth theory Cluster theory
McAdam and Marlow (2007)	Internal operation of a business incubator	Social network theory
McAdam and McAdam (2008)	University business incubator operations	Communities of practice theory Growth theory
Mian (1994)	University technology business incubators	None described
Mian (1997)	Managing university technology business incubators	Goal approach System research approach Stakeholder approach Internal process approach
O'Connor, Burnett and Hancock	Links between entrepreneurship education and	Entrepreneurship theory

(2009)	incubation	Communities of practice theory
Patton et al (2009)	Factors in technological business incubation	Network theory Inter-dependent coproduction modelling
Sherman and Chappell (1998)	Evaluating business incubator outcomes	None described
Sipos and Szabo (2006)	Benchmarking of business incubators	None described
Udell (1990)	Business incubation and employment	None described
Uy et al (2010)	Entrepreneurship theory and incubation	Entrepreneurship theory
Von Zedtwitz (2003)	Classification and management of business incubators	None described

METHOD APPLIED IN PREVIOUS BUSINESS INCUBATION RESEARCH

This study sought to establish how the incubator under investigation has assisted and developed the businesses of individual tenants, and looked to previous, similar studies to inform the method to be used. A significant influence was the study of tenants of a university technology business incubator at the University of Southampton, conducted by Patton, Warren and Bream (2009). This used a single case study approach to investigate the business incubator operated by the University of Southampton, in particular the relationships between the owners of the businesses operating at the incubator, the incubator manager and external stakeholders. It also used formal interviews to collect data, which were recorded, transcribed and categorised (D. Patton, et al., 2009). Similar methods were also used by Mian (1996) to examine two university business incubators in the United States, Bollingtoft and Ulhøi (2005) who investigated a single business incubator in Denmark and (Grimaldi & Grandi, 2005), who investigated eight business incubators in Italy.

Looking more broadly, qualitative methods have been gaining acceptance for small business and entrepreneurship research (Perren & Ram, 2004), it is a choice of research method that is supported by Yin (2011), who states that qualitative research collects and integrates data from a variety of sources of evidence. As part of taking this approach, there is an acknowledgement of the complexity of the research setting and the diversity of the participants that can require the use of interviews and observations with conclusions drawn triangulating the data from different sources (Yin, 2011). Qualitative research method is further supported for use by this study as Eisenhardt (1989) notes, “Case study research is a research strategy which focuses on understanding the dynamics present within (single) settings” (Eisenhardt, 1989, p. 534).

In practical terms, case studies refer to the investigation of a phenomenon within its natural setting, by collecting detailed information about particular issues, frequently including the accounts of subjects (Eisenhardt, 1989; Stake, 2008; Yin, 2009). A case study approach was perceived to provide a better understanding of the complex interactions that occur internally and externally in a business incubation program, whereas a quantitative survey and statistical analysis would provide only general

insights into business incubation. As Yin (2009) puts it, a case study illustrates the how and why, not just the what, where and when.

Yin (2009) describes the appropriate use of a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident. It is a useful method of inquiry that can be used either to develop theory or inform the collection of data. Chetty (1996) makes the point that case study research allows research to flow from the data collected to theory, an idea first outlined by Eisenhardt (1989), while Yin (2009) suggests the first step in case study research is to develop theory to collect data.

Eisenhardt (1989) describes in detail the multiple case study approach for research purposes, indicating how a researcher can look for patterns across cases to develop theory that does not rely on one example or accidental relationships (Eisenhardt, 1989). Yin (2009) describes a more divergent multiple case study research approach, in which each case is looked at as a separate entity, and is then compared to one another and then to theory. This continuous interaction between the theory and the data allows for a researcher to make more in-depth analysis and not rely on statistical generalisation (Yin, 2009).

Multiple case study research has been criticised by Dyer and Wilkins (1991) in their critique of the writings of Eisenhardt (1989), "who argue that the use of multiple case studies may mean "the theoretical progress of the field of management may suffer" (Dyer & Wilkins, 1991, p 613). Their suggestion is that good storytelling regarding a single case provides better theoretical insights than multiple case study research based on creating good constructs (Dyer & Wilkins, 1991).

Case study method has been found to be particularly useful in areas of study where theoretical and conceptual frameworks are poorly developed and understood (Chetty, 1996; D. Patton, et al., 2009). As stated by Hackett and Dilts in their review of business incubation literature, business incubator-incubation phenomenon has not been well developed (Hackett & Dilts, 2004b) and thus researchers have successfully used the case study method on a number of occasions to explore theories and concepts in business incubation (Burnett, 2009; Lichtenstein, 1992; Mian, 1996; D. Patton, et al., 2009; Rice, 2002).

Perren and Ram (2004) indicate that the case study approach is frequently used in small business and entrepreneurship research without a detailed "discussion of the distinctive philosophical consequences of applying the case study approach" (Perren & Ram, 2004, p. 84). They devised a paradigmatic map as a sensitising device for research in this area. While recognising the dimensions of the map overlap and that "some research may be deemed to span both domains" (Perren & Ram, 2004, p 91), it does provide a useful guide to the philosophy of case study methodology (see Figure 3.2).

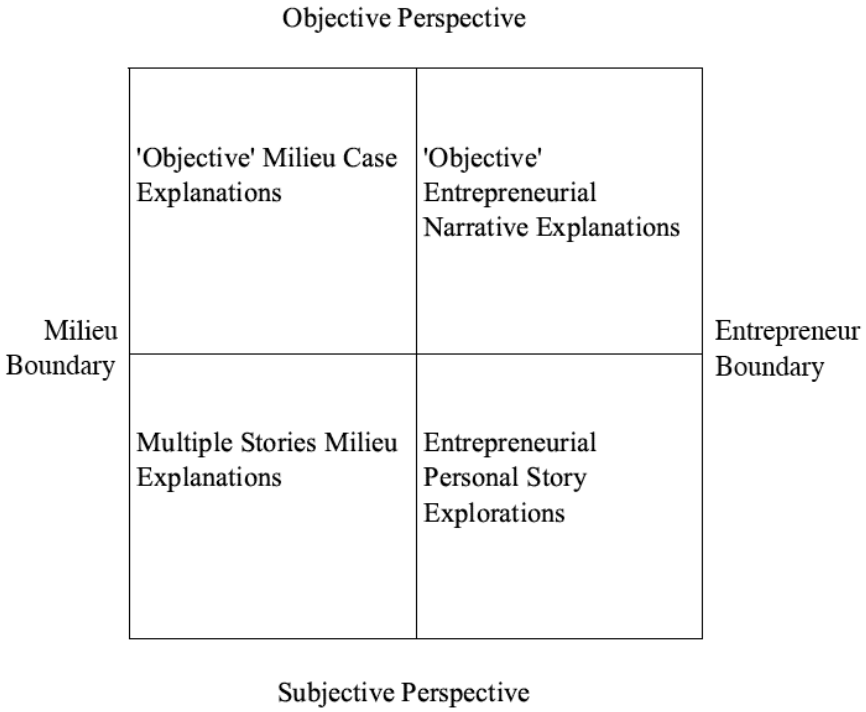

Figure 3.2: Mapping the paradigms adopted by small business and entrepreneurial case-study researchers (Perren & Ram, 2004).

This study is plotted on the paradigmatic map between objective milieu case explanations and multiple stories milieu case explorations. Therefore the researcher considered a single case study on a business incubator organisation and its history, placing it as an objective milieu case explanation, but balanced this approach with also looking at the multiple stories of the social actors, the current and former tenants and the incubator manager in this case (Perren & Ram, 2004). Within the framework of

previous research conducted into business incubation, this is considered an appropriate method for this particular research.

SUMMARY OF THIS SECTION

This section has described the philosophical underpinnings of the framework in which the research was conducted. It debates the relative merits of the four major paradigms used in social research before settling on a realist paradigm which is then used to inform the design of the case study methodology, which will be discussed in more detail in the following section.

JUSTIFICATION

RESEARCH QUESTIONS IDENTIFIED FOR THIS STUDY

This study seeks to answer three key questions that will help gain a better understanding of the influence business incubation has on developing new enterprises in Australia. The research questions are:

1. What are the advantages perceived by tenants/former tenants of an incubator environment?
2. What are the disadvantages perceived by tenants/former tenants of an incubator environment?
3. What impressions do tenants/former tenants have of the interaction with the incubator manager?
4. What are the motivations of tenants/former tenants for locating within an incubator?

As these questions address the perceptions, impressions and motivations of tenants and former tenants, the researcher sought to use a method that had been used successfully in similar research to incorporate multiple sources of data.

JUSTIFICATION OF THE CHOSEN METHODOLOGY

The case study method has been used widely within entrepreneurship research, as illustrated by Eisenhardt (1989) who provided seven examples of case study approach being used in entrepreneurship research to develop theory. Case studies have also been used broadly within the field of incubator research. Table 3.5 below is representative of recent incubator research from 2007 to 2012 that has used case study methodology.

Table 3.5: Recent study methodologies of incubators

Author/s	Title	Subject	Data sources
Cooper, Hamel and Connaughton, 2012	Motivations and obstacles to networking in a university business incubator	Case study of 18 resident companies and incubator administrators in a technology commercialisation incubator	Interviews Site visits Document review Survey.
(Kitagawa & Robertson, 2012)	High-tech entrepreneurial firms in a university-based business incubator	Case study of 24 start-up firms at a university-based technology incubator	Online survey Case studies of individual firms Interviews Document review.
(D. Patton & Marlow, 2011)	University technology business incubators; helping new entrepreneurial firms to learn to grow	Two case studies of 27 firms within two incubators	Observation Conversation Questionnaire Document review.
(Warren, Patton, & Bream, 2009)	Knowledge acquisition processes during the incubation of new high-technology firms	Multi-method case study of incubator directors and 12 business founders	Observation Conversation Questionnaire Document review.
Schwartz, 2011	Incubating an illusion? Long-term incubator firm performance after graduation	Case study and empirical data of five incubators in science parks	Interviews Document review Performance data.
(Mian, Fayolle, & Lamine, 2012)	Building sustainable regional platforms for incubating science and technology businesses	Case study of three US and French technology and science parks	Interviews Document review.
(Voisey et al, 2007)	The measurement of success for BI	Individual case study of a Welsh incubation project	Interviews Document review Performance data.

Based on existing research into business incubators, therefore, the case study research method was considered appropriate for this study. It was also judged to possess the necessary characteristics and qualities to inform the researcher about the business incubation services and their impact on enterprise development at one university-linked incubator in Western Australia.

The case study approach employed by the researcher for this study was in compliance with the principles established by Yin (2009), including the use of multiple sources of evidence, creating a case study database and maintaining a chain of evidence. This type of approach does have its shortcomings, in particular the propensity for the researcher to generalise and interpret data with a personal bias (Perren & Ram, 2004; Stake, 2008; Yin, 2009).

Although this study provides a case study of a single organisation, a university-linked business incubator, it also includes examination of the perceptions and experiences of former incubator tenants and the incubator manager. In this particular study, an approach was used that still allowed for patterns of experience and understanding among individual tenants to be clarified and their relationship with the incubator to be made clearer.

By choosing the case study approach for this study, the researcher was aware of the pitfalls identified in the literature of bias and other flaws with case studies (Perren & Ram 2004; Stake 2008; Yin 2009) and endeavoured to mitigate these by asking non-leading questions and being conscious of the risk that personal interest could influence interpretation. The researcher explored the advantages and disadvantages of the objective milieu case explanation and multiple stories milieu case exploration, as outlined by Perren and Ram (2004), and attempted to negate the pitfalls by balancing the case study approach used in this study. By including multiple perspectives, it was hoped that the overarching study would "highlight the multiple realities of the social world and help avoid the trap of oversimplified models and answers" that can be a risk of the single, objective milieu case explanation approach (Perren & Ram, 2004, p 91).

CASE STUDY METHOD

CASE STUDY METHOD AND DATA COLLECTION PRINCIPLES

Yin (2009) describes four potential data collection activities: interviewing; observing; collecting and examining; and feeling. Within these four methods the following practices were observed in this study:

Interviewing: structured questionnaire and qualitative interviews of tenants and the incubator manager, with qualitative interviews conducted using Yin's (2011) recommendations of speaking in modest amounts, staying non-directive and neutral, maintaining rapport and analysing when interviewing (Yin 2011).

Observing: attendance at the incubator to see how the operation was set up, how the manager interacted on a casual basis with tenants and support staff, and observing day-to-day activities, then deriving meaning from these observations to give context to other responses.

Collecting and examining: collection of other non-directly observable information about the incubator's activities, including annual reports, the organisation website, and newspaper articles about the history of the incubator.

Feeling: incorporation of the researcher's perceptions gained when talking to interview subjects and also when witnessing interactions at the incubator.

This study used a case study of a single university-linked business incubator, using interviews of the manager, existing tenants and former tenants, as well as a desktop document search of the incubator. More detail about the research design is provided below.

RESEARCH DESIGN FOR THIS STUDY

Initial Phase

The researcher conducted a thorough search for all currently operating business incubator organisations in Australia, to determine the context of the institution to be used for this study. The chosen incubator was selected as the only university-linked business incubator in the particular State. It has operated for 10 years, and as such provided sufficient information over a long period to enable it to be studied in detail. The initial phase of research included contrasting the legal structure and governance of the selected incubator with what is known about other incubators in Australia (of which there are approximately 50). The selected business incubator organisation was contacted by letter, once ethical approval was secured, with the letter outlining the purpose of the research. The management's willingness to participate in the study was established.

Phase 1

Once agreement was reached with the business incubator manager for his participation, and his approval was given to approach current and former tenants, a list of these tenants was provided by the incubator manager to the researcher. A letter was sent by the manager to these current and former tenants inviting them to participate in the study. The letter outlined the purpose and procedures involved in the study and requested their participation. A potential pool of 31 current tenants was available for the study and 22 former tenants whose details were recorded. Positive responses were received from eight current and two former tenants.

Each of these participants was asked to complete an informed consent form, which they did, and complete a simple questionnaire that included descriptive data, such as their years of operation and nature of business. These questionnaires are described in more detail in the following section. These were then returned to the researcher as authority to contact them to arrange a time suitable for interview. During the initial telephone calls, the purpose of the study and confidentiality issues were reiterated, any questions regarding the study were answered and an interview time and place was arranged. The demographic data questionnaire provided comparative data to help

inform the researcher prior to interview and completion indicated the tenants' commitment and that of the manager to participate in the study.

Phase 2

Narrative data was collected to identify how the participants experienced the business incubation program delivery. An open-ended interview technique was utilised with specific clarification and elaboration probes used to obtain expansion and clarification on the participants' responses (M. Q. Patton, 2002). All interviews were tape recorded to aid validity (Yin, 2011). Interviews were held in two sessions and included structured questions that were provided in advance to participants and unstructured questions that arose from responses.

A long (approximately 120-minute) interview was conducted with the incubator manager to build a picture of the operations, legal structure, governance, services and operating environment of the incubator. As established in the literature review, managers are frequently the first source for researchers when conducting case studies on incubators (Hannon & Chaplin, 2003; Rice, 2002; Schwartz, 2011; Tötterman & Sten, 2005). Interviewing the manager provided context to the other sources considered in this study, including tenants about their experiences and the review of documents. It provided a perspective that could be used to help reduce bias in tenant responses, just as their responses provided a balance to the manager's perspective.

In addition, eight current tenants of the incubator and two former tenants were interviewed to determine their perceptions of how the incubator had impacted on their enterprise development. The former tenants were interviewed to provide more holistic views than those potentially offered by the current tenants. This follows the approach used by a number of researchers including (Chalkley & Strachan, 1996; Hannon & Chaplin, 2003; Schwartz, 2009) as the difficulties of getting a strong response from tenants, present and former, have been well documented (Birrell & Waters, 2007; Mian, 1996). A specific question was also included in interviews of former tenants, which was their motivation for leaving the business incubator. In addition, both current and former tenant interviews allowed for the collection of as many perspectives as possible on the issue. The formation of interview questions and is described in more detail in the following section.

FORMATION OF INTERVIEW QUESTIONS

As described above, narrative data was collected to identify how participants experienced the delivery of the business incubation program, using an open-ended interview technique including structured and unstructured questions. The questions were developed in two stages and provided to the tenants in advance. Stage one considered the demographic data captured in previous incubation studies and followed this format to ascertain:

Table 3.6: Prior incubator research and questions posed

Question	Prior research
Whether the interviewee is the owner of the business	(Burnett & McMurray, 2008; M. McAdam & Marlow, 2008; Swierczek, 1992; Warren, et al., 2009)
Gender	(Burnett & McMurray, 2008; C. E. Cooper, S. A. Hamel, & S. L. Connaughton, 2012; Mattare, Ashley-Cotleur, & Masciocchi, 2012; Servon, 2006; Swierczek, 1992; Warren, et al., 2009)
Age	(Burnett & McMurray, 2008; C E Cooper, S A Hamel, & S L Connaughton, 2012; Mattare, et al., 2012; Swierczek, 1992; Warren, et al., 2009)
Legal structure	(Burnett & McMurray, 2008; Voisey, et al., 2006)
Industry classification of the business	(Burnett & McMurray, 2008; C E Cooper, et al., 2012; Mattare, et al., 2012; Voisey, et al., 2006)
Operation history of the business	(C E Cooper, et al., 2012; Mattare, et al., 2012; M. McAdam & Marlow, 2008; Voisey, et al., 2006)

Time in the incubator	(Burnett & McMurray, 2008; C E Cooper, et al., 2012; Voisey, et al., 2006; Warren, et al., 2009)
Number of employees and employment status	(Burnett & McMurray, 2008; C E Cooper, et al., 2012; Hannon & Chaplin, 2003; Mattare, et al., 2012; M. McAdam & Marlow, 2008; Swierczek, 1992)
Whether the business had other firms or general consumers as its primary clients	(Hannon & Chaplin, 2003)clients (Mattare, et al., 2012; Voisey, et al., 2006)
Whether any income was generated from overseas and from where	(Hannon & Chaplin, 2003)

A second stage of interview questions was developed by anticipating factors that might influence an interviewee's responses, including their personal history, the trajectory of growth within the business and out-of-ordinary experiences within the incubator. These questions were included to ensure later interviews were suitably informed. These additional questions asked:

- How much money had been invested by the owners, private investors or bank finance to date;
- Whether the owner had previously operated a business, for what period of time and whether it was located in an incubator;
- Whether the owner had been provided with additional support from the business incubator that was not from one of the staff of the incubator, in what form, and at what cost to the business; and
- Whether any technology had been patented while the business was in the incubator, what it was and how the incubator assisted with the patenting process.

While these types of questions are not normally identified in incubation research, it was felt that the answers could provide useful avenues of investigation and sought to extend previous research.

SEMI-STRUCTURED INTERVIEWS

Once the questionnaires were received, the answers provided a basis for semi-structured interviews. In these interviews a series of structured questions were asked, again based on similar questions in previous studies, which then allowed for unstructured questions based on the responses.

The structured questions asked of each interviewee were:

1. Why did you start (locate) your business within the business incubator? (Burnett, 2009; Burnett & McMurray, 2008; M. McAdam & Marlow, 2008; Voisey, et al., 2006)

2. What do you think are the advantages of operating your business from the incubator? (Burnett, 2009; Burnett & McMurray, 2008; Maville, 2005; Warren, et al., 2009)

3. What do you think are the disadvantages of operating your business from the incubator? (Burnett, 2009; Warren, et al., 2009)

4. How would you rate the value of interaction with the business incubator manager/business advisor compared to other advice, for example your accountant? (M. McAdam & Marlow, 2008)

5. What services do you use that are provided by the business incubator? (Burnett, 2009; M. McAdam & Marlow, 2008; O'Neal, 2005; Voisey, et al., 2006)

DATA ANALYSIS TECHNIQUES EMPLOYED

Having collected data from multiple sources to create a chain of evidence, the data gathered was compiled and recorded in NVivo®9 to allow assessment to be made on individual cases and across cases. Interviews were transcribed and analysed through the software, with codes used to collate text under 'nodes' by identifying themes in responses, using the grounded theory framework analysis approach of Ritchie & Spencer (1994) by following the steps of familiarisation, identifying a thematic framework, indexing, charting, mapping and interpretation.

The research questions were used to establish the following tree nodes:

1. Advantages perceived by tenants/former tenants of an incubator environment
2. Disadvantages perceived by tenants/former tenants of an incubator environment
3. Impressions by tenants/former tenants of the interaction with the incubator manager
4. Motivations of tenants/former tenants for locating within an incubator

Under each tree node additional codes were used to collect themed responses. These were compared to themes identified in the literature and were refined during the coding and cataloguing steps. Table 3.6 indicates the nodes used in coding.

Table 3.7: Nodes used in coding interview responses

Advantages of operating from a business incubator
Business assistance
Competitive Pricing
Entrepreneurial culture
Flexibility
Location
Networking with other small businesses
Professional office
Reception and secretarial services
Test business model
Disadvantages from operating at the incubator
Complacency
Lack of space
Outgrow the incubator
Too easy
Two year time horizon
Perceptions of interaction with the incubator manager
Accessible
Knowledgeable
Not pushy
Professional
Ready to assist
Motivation to move into incubator
Business assistance
Can't operate from home
Competitively priced
Flexible space
Location to home
More professional
Needed more space
Not as isolating as home

OTHER PROCEDURES

ETHICAL PROCEDURES ADOPTED IN THIS STUDY

This study was conducted in accordance with the ethical protocols set out by the relevant research institution.

In accordance with the institution's procedures, no recruitment took place and no research was conducted until ethics approval was secured. Once approval was granted, a Letter to Participants and Informed Consent Document were provided to all participants and the consent document signed before proceeding. All participants were additionally informed that their participation was entirely voluntary, that they could withdraw at any time, that the interview would be recorded for accuracy and that they would not be identified for confidentiality purposes. A copy of the Letter to Participants and Informed Consent Document is attached in Appendix A.

LIMITATIONS

PROBLEMS AND LIMITATIONS ENCOUNTERED IN THE STUDY

As part of determining the best method with which to conduct this research, the researcher identified key limitations on the scope and nature of the study that could affect the application of the results, in order to mitigate these limitations where possible.

The immediate limitation of this study is that it is confined to a single university-linked incubator and, as such, may not produce results that can explain the experiences of all tenants at all university-linked incubators. The sample of tenants is also small at 10 firms. The nature of incubator research has been such that this is a common concern (Atherton & Hannon, 2006; C. E. Cooper, et al., 2012; Lewis, 2001; Pena, 2004).

In this case study, the university link to the business incubator is far less defined and utilised than in the university incubators usually considered by the academic literature. This is mostly due to a change in management structure that has only recently opened the door to closer university interaction. Given this, many of the findings from the field of university incubation literature are less applicable than they would be in a high-touch, strong university linkage incubator.

For the same reason, many of the measures of impact used when investigating university relationships with business incubator companies — such as citations in academic publications, patents, collaborative patterns in publications and information on formal contracts (Rothaermel & Thursby, 2005) — are not useful sources of information.

Lewis (2001) summarises a number of other limitations of incubator research, including a lack of consistent measures of success, failure to compile reliable data on graduates, early nature of the research, limited research on failed incubators and selection bias. In addition, few studies include control groups, as the cost and time of investigating the experience of similar firms that have not gone through incubation can be prohibitive.

This study cannot address all these limitations, but does seek to provide greater detail on the individual firms within one university-linked incubator in order to provide greater understanding about the impact of incubation. Schwartz (2011) notes that much of the literature lacks data about "incubator-specific support components and what actually happens during the stay in the incubator" (Schwartz 2011, p. 510), which this study seeks to provide.

As the study was exploratory in nature the results cannot necessarily be extrapolated to the general incubation population, rather they should be viewed as preliminary in nature and not definitive.

CHAPTER 4 – RESULTS

INTRODUCTION

The following section outlines the results of the study into a university-linked incubator (henceforth called *The Incubator*). The university owning the building and linked to the operations of *The Incubator* will be referred to in italics, as *the University.* Tenants have been de-identified, as has the manager, who will be referred to as *The Manager*.

BACKGROUND TO THE CASE

The Incubator was started in 2001 as a partnership between an Australian university, *the University,* a local business association and the local government authority. The three organisations came together to apply for Federal Government funding from AusIndustry, who at the time administered the Building Entrepreneurship in Small Business (BESB) program. The aim of BESB was to create a culture of entrepreneurship and develop the management skills of the owners of small businesses in Australia (AusIndustry, 2012).

The partners created a not-for-profit incorporated association to administer the BESB funding to create the business incubator, and then to employ a manager to operate *the Incubator* for the life of the funding program. BESB required, as part of the program, a ten-year contract that guaranteed that the facility be used as a business incubator.

As part of the funding agreement, a block of land owned by *the University* was donated for the purposes of *the Incubator*. The construction of the building took place during 2002 and the facility opened its doors in April 2003. The building was 494 square metres in total lettable space with a 60 square metre training room. This created space for up to 31 businesses, depending on their need for office space.

The Incubator had job creation as its primary purpose, with the goal of assisting small businesses to start and take office space and then encouraging their development to grow and create new employment (*The Manager*, personal communication, 10th February, 2012). Over the ten years the business incubator has been operating, some 90 businesses have graduated from the facility, creating approximately 200 jobs (*The Manager*, personal communication, 10th February, 2012).

Business owners can choose to enter *the Incubator* at any stage of their business development, whether as a start-up, early-operation business or established firm. Management indicated that some tenants have been operating for more than 10 years before relocating to *the Incubator*. The entry criteria used by *the Incubator* are broad: the business has to be a new business, a business that has growth potential or a business that is expanding their operations into the local region.

The Incubator does have a time limit attached to occupancy; tenants must move out after two years of operations in the facility, with some flexibility depending on the circumstances of up to three additional months. This time limit is strictly adhered to, as the business incubator has had a waiting list for new tenants wanting to enter the facility for more than five years. The occupancy in March 2012 was 34 businesses, with 10 businesses considered to be 'virtual' tenants of *the Incubator*, in that they make use of the facilities of the building whilst not being tenants of the building.

The Incubator provides a range of services to its tenants, including business development assistance, reception and secretarial services, shared office equipment such as a photocopier, binding and fax machine, and it offers the ability to hire training rooms or day rooms for office use.

Office space at *the Incubator* is rented at a rate of $533 per square metre per annum, however tenants usually occupy just 15 or 30sq m and pay no outgoings. This represents an annual rental cost of approximately $15,990 to $31,980. In contrast, a search conducted in May 2012 of two commercial property rental websites for the local area found the smallest available office space for rent to be 43sq m, at a rate of $413/sq m annually ($17,800) but not including any outgoings for electricity or other overheads. The majority of other listings on the commercial property websites were

for office floor spaces in excess of 200 square metres (Commercialrealestate.com.au, 2012; Realcommercial.com.au, 2012).

Since its opening in April 2003, five managers were employed by the original legal entity of the business incubator, before the current manager was employed in 2005. *The Manager* believed he was chosen for the position as incubator manager due to his experience at a business incubator owned by a local government authority in the United Kingdom which he was employed at for two years prior to immigrating to Australia.

At the end of the funding period, as per the funding contract with AusIndustry, the facility reverted to the owner of the block of land on which it was built, *the University*. As of July 2011, the facility changed names to carry *the University's* brand and is a fully owned facility of *the University*.

The University immediately undertook improvement renovations, creating an additional 190 square metres of additional space plus an additional kitchen facility. This increased the number of potential businesses occupying *the Incubator* by eight, for a total potential size of 39 businesses.

During the transition in ownership of the facility, *the Manager* was retained by *the University* to manage *the Incubator*. He has now worked as *the Incubator* manager for seven years. *The Manager* was interviewed as the manager of *the Incubator* for the purposes of this research.

PROFILE OF THE PARTICIPANTS

Ten tenants, eight of whom are current tenants of *the Incubator* and two former tenants, also were interviewed in semi-structured interviews to determine their motivations, perceptions and priorities in seeking space in an incubator and the role of the manager in influencing the development of their new enterprises. Their business profiles are described in Table 4.1, below.

Table 4.1: ANZIC Classification of incubator participants

Firm	ANZIC class.	No. of employees including owner	Years in this business	Months in the incubator	Legal structure	Previously operated a business?	Exports?
1	Property and business services	2 full-time 4 part-time	15	5	Pty Ltd	No	No
2	Property and business services	3 full-time 1 part-time	2	6	Pty Ltd	Yes	Yes
3	Property and business services	1 full-time	< 1	2	Pty Ltd	Yes	No
4	Property and business services	11 full-time	8	5	Pty Ltd	Yes	No
5	Agricultural, forestry, fishing and hunting	1 full-time 2 part-time	13	5	Pty Ltd	No	Yes
6	Property and business services	2 full-time 14 part-time	1	6	Trust trading as Pty Ltd	Yes	Yes
7	Property and business services	2 full-time	9	36	Trust trading as Pty Ltd	Yes	No
8	Construction	67 full-time	2	10	Pty Ltd	No	No
9 (former)	Property and business services	5 full-time	8	24	Pty Ltd	Yes	No
10 (former)	Health and Community Services	1 full-time 1 part-time	5	8	Pty Ltd	Yes	Yes

Three of the 10 business owners interviewed were female. Seven business owners were aged 40-49, followed by 50-59 (two) and 30-39 (one). The firms were classified using the Australian and New Zealand Industry Classification system, with the majority classified as property and business services; however specific business roles included social media design, asset maintenance services, business training and coaching and bookkeeping services.

ADDRESSING THE RESEARCH QUESTIONS

This study seeks to answer four key questions that will help gain a better understanding of the motivations, perceptions and priorities of tenants in seeking space in an incubator and the influence the process of business incubation (including the role of the manager) has on the development of new start-up small businesses that operate from such facilities. The research questions are:

1. What are the advantages perceived by tenants/former tenants of an incubator environment?
2. What are the disadvantages perceived by tenants/former tenants of an incubator environment?
3. What impressions do tenants/former tenants have of the interaction with the incubator manager?
4. What are the motivations of tenants/former tenants for locating within an incubator?

These research questions were used to establish the following tree nodes:

1. Advantages perceived by tenants/former tenants of an incubator environment
2. Disadvantages perceived by tenants/former tenants of an incubator environment
3. Impressions by tenants/former tenants of the interaction with *the Incubator* manager
4. Motivations of tenants/former tenants for locating within an incubator

Under each tree node additional codes were used to collect themed responses. These were compared to themes identified in the literature and were refined during the coding and cataloguing steps, as was described in the previous chapter.

Table 4.2 below indicates the codes used within each tree node and the number of sources for each, demonstrating the dominant perceptions among the tenants in relation to the key themes.

Table 4.2: Dominant perceptions of tenants at the Incubator

Tree/subsidiary node	References	Sources
Advantages from operating at the Incubator		
Location	5	4
Business assistance	4	4
Professional office	4	4
Competitive Pricing	4	4
Entrepreneurial culture	3	2
Networking with other small businesses	2	2
Reception and secretarial services	1	1
Flexibility	1	1
Test business model	0	0
Disadvantages from operating at the Incubator		
Outgrow The Incubator	3	3
Complacency	2	2
Lack of space	2	2
Too easy	0	0
Two year time horizon	0	0
Perceptions of interaction with the Incubator manager		
Knowledgeable	5	5
Ready to assist	5	4
Accessible	4	3
Not pushy	4	3
Professional	1	1
Motivation to move into the incubator		
Competitively priced	7	6
Can't operate from home	4	4
Flexible space	4	4
Needed more space	4	3
Location to home	3	3
Not as isolating as home	2	2
Business assistance	2	2
More professional	1	1

RESULTS OF SEMI-STRUCTURED INTERVIEWS

The following section describes the results of the semi-structured interviews conducted with the tenants and former tenants. The questions are indicated throughout and where additional comments were provoked by discussion, this is highlighted.

REASONS FOR LOCATING IN A BUSINESS INCUBATOR

The first structured question asked of each interviewee was "Why did you start (locate) your business within the business incubator?" This question has been asked in previous studies and was considered important in ascertaining the perceptions, priorities and motivations of tenants.

More than half the participants (five out of the eight current tenants and both former tenants) reported that the price of the office space at *the Incubator* was a significant factor for them locating and operating their business from the facility, with this response the first given in each case. One participant put it this way:

> "We wanted to keep our expenses as low as possible, although the business is growing exponentially, but we are still very green, very young at it, we didn't want to take a high risk, high cost premises. We did not want to end up with a whacking great premises that is empty". Participant 2

Other factors that motivated the decision to locate their businesses within *the Incubator* included issues related to operating the enterprise from home. Participants said that either their home was too small for their business or that they did not have space to operate from home, implying that they would otherwise have operated their business from home if that were possible.

The flexibility of office space was also identified by six of the ten participants, in that the business could operate from a small, single office and, if successful, could easily relocate within the same facility to a larger office when required. This was often said at

the same time as describing the home office as being unsuitable to the businesses operating requirements. For example, one participant described their situation:

> "I have a one year old and she is the centre of my planet and so if I was at home and try to operate from my front office that would be very difficult for me". Participant 7

Participants thought that the inherent flexibility of *the Incubator* was a very valuable aspect of the facility's operations, as it saved them from having to rent larger premises from the beginning in the hope that the space would be used. This flexibility further saved them from having to commit to a long-term office lease at a time in which they were still not certain of their office needs during the lease-term period or how their situations may alter due to factors arising when starting or growing the business.

The participants also identified the attractiveness of the implied professionalism from operating from the business incubator rather than from a home office address as a factor in leading to their entry. As one participant described it:

> "I also think there is a credibility level for new businesses when you are trying to build the business. When my office is at the Incubator, that actually says I am serious in being in business." Participant 6

For this participant, the issue was that credibility, with the decision to enter *the Incubator* indicating that the business was not a hobby, but a "proper business" operating from credible business premises.

Several participants mentioned that they had become aware of *the Incubator* through word of mouth and then realised the facility suited their needs, which would suggest that awareness of *the Incubator* is an underlying factor in all other motivation. As one put it:

> "We looked at real estate agents and people showed us (offices) but nothing gave me the confidence to take that leap of faith and (we) found the business incubator idea on the web. We came up here and got a meeting with the Manager and the concept was just amazing – it was like everything we wanted. It was like the whole concept was just perfect." Participant 1

As part of following up the responses in the semi-structured interview, both former tenants were asked about their motivation for leaving the business incubator. In each case, the tenants responded that this was driven by changes in their business. In one instance, the business had reached its two-year time limit for being located in the business incubator and in the other, the business had not progressed as planned, and had decided to relocate home to reduce costs and develop an alternative business model.

ADVANTAGES OF OPERATING FROM A BUSINESS INCUBATOR

The second question put to the participants sought to identify the benefits the participant perceived as important to the operations of their business: "What do you think are the advantages of operating your business from the incubator?" Again, this is a question that has been addressed by numerous sources, in order to determine the aspects of the operation of the business incubator deemed most valuable to the business owner.

The question was answered by all participants, with many wanting to describe how valuable the business incubator had been to their businesses success and how important the decision of moving into *the Incubator* had been in the development of their enterprise.

Participants raised the issue of *the Incubator's* location more often than any other advantage, in particular with regard to commuting times from home to the office. Participant 2's response was typical of the responses received:

> "Silly thing, now that I am at this stage, I want to be comfortable where I work, and I love working close to home, I like it and I don't imagine I want to go too far from here". Participant 2

Participants did not respond with regard to the location of the business incubator in the general sense of the geographic location of the business incubator and its proximity to other services such as the University, a regional shopping centre and central

business district and other business services such as accountants and IT providers within the complex.

Three responses were reported with equal frequency: the price of the offices; the professionalism offered by the facility to their business; and business assistance provided by the management of the business incubator.

Price of the office space came up as a key advantage, with participants commenting on the lower price at the business incubator compared to other commercial office space available in the area around the business incubator. One participant described the issue thus:

> "Low cost of rental is huge for us at the moment, and at least for the next eighteen months. It allows us to spend money on developing the business instead on a rental on (St George's) Terrace". Participant 5

For this participant, the advantage to their business was in terms of cashflow, with the ability to reinvest money to develop the business rather than "wasting" money on office space.

Another responded described the situation in similar terms:

> "If you go to an office, you are making a million dollar commitment. Here you are making over the two years a $40,000 commitment. At the end of the two years, they have nurtured you through, they have helped with a lot of things, they are going to wave you goodbye and wish you God speed." Participant 4

The provision of business assistance as an advantage of operating from a business incubator was a response repeated by four of the business owners, indicating that this aspect of the business incubator was important to their business. One participant described it in this way:

> "[The Manager's] advice — he is always there to help and to guide you for support or as a sounding board for ideas that you have. I thought, well I like this guy and I wouldn't mind working with him and he has helped me a lot to get me clients and get me references." Participant 8

Another response mentioned by six owners was the advantage provided by being in a professional office environment. The responses here included discussion of the improved reaction one owner received from clients visiting the business at *the Incubator* compared to when the business operated from the owner's home:

> "Just the feedback from the clients. I think it is far more professional to introduce them via an office and a lovely reception area. It takes us the next level up out of a local home business, makes us appear more professional for the clients, particularly new clients. We have just had such good feedback from the clients." Participant 1

Another tenants noted the difference in operations that presence in the business incubator had had on the business, citing an:

> "…Ability to separate my work and home time effectively. My productivity has increased. Productivity of my staff has increased as well." Participant 3

Again, the competitive price and flexibility are cited as significant advantages by tenants when considering the benefits of being installed in an incubator; but it is also clear that once established, they do value the provision of business advice. This was cited by four of the 10 tenants, and included comments that indicate they were grateful advice was not 'pushed' on them but was available when needed.

DISADVANTAGES OF OPERATING FROM A BUSINESS INCUBATOR

The third structured question asked of each interviewee was "What do you think are the disadvantages of operating your business from the incubator?" In contrast to the previous two questions, this question has been asked less frequently, though does occur in studies by Warren et al (2009) and Burnett (2009).

As might be expected, the businesses located at the business incubator and those formerly located at the business incubator found it difficult to describe negative aspects of *The Incubator*'s operations. Most participants (eight) answered this question with a one or two word response, indicating that they saw nothing particularly

disadvantageous in operating from *The Incubator*. Their remaining responses (two) indicated what could be seen as relatively trivial issues, such as one participant who indicated they disliked unclean coffee cups and spoons in the common kitchen areas being left behind by tenants.

A follow-up question was included, which asked participants as to whether they could indicate any disadvantages of being within an incubator when compared with a scenario of "not being located in the business incubator at all," which prompted some additional discussion. In four cases, participants described disadvantages related to the growth aspects of their business, and the requirement to shift out of *the Incubator*'s supportive environment. As one put it:

> "I think we are pushing time in the next three to four months, we will have outgrown it. This place has been fantastic, it's great, we don't want to move out, but we will have to soon". Participant 4

Another disadvantage described by four participants related to growth and the physical space available, with participants indicating that their business was being constrained in its growth due to the limited space available within the facility, including space to store stock. These participants felt these limiting aspects of the building could ultimately determine their ability to stay within the facility.

One unexpected issue that was described by participants was the issue of complacency, raised as a disadvantage for growing their business. This response represented a contrary position when contrasted against the earlier advantages cited of having low rental costs. In effect, the participant argued that the lower rate of rent meant that income did not need to be chased to pay for rent, while other aspects of *the Incubator*'s services, including the provision of reception, secretarial and shared office equipment, made business operations easy and affordable. The participant said:

> "You get complacent in your smaller office, so it stops you from growing bigger if you wanted to because you would then have to find the big premises and pay more money". Participant 2

This created a sense that being in business was 'easy' and that the owner realised this was unrealistic, but difficult to give up.

VALUE OF INTERACTION WITH THE BUSINESS INCUBATOR MANAGER

The fourth semi-structured interview question asked how the business owner would rate the value of interaction with the business incubator manager/business advisor compared to other advice they received professionally, such as from their accountant? This question had previously been put by McAdam and Marlow (2007), in relation to the interaction between firms at a university-linked incubator and the university academics and personnel who operated the incubator, and while this is not entirely applicable to the managerial structure at *the Incubator,* it was believed to be worth investigating. A wider review of business incubator literature found that while considerable importance was placed on the provision of management services within incubators, the day-to-day interaction and any value placed on this was not often an issue specifically raised with tenants.

The participants gave mixed answers to this question, with four answering very positively and citing a high level of interaction with the business incubator management while six participants indicated that they had almost no interaction and did not require assistance in developing their businesses.

The majority of responses n=8 confirmed the approach taken by the management of *the Incubator* represented a laissez-faire approach to business development assistance. In this incubator there is no structured business development program to assist start-up firms, as is the case with many university business incubators (Hannon, 2004). Management's approach to service delivery was instead to be accessible at all times and provide the best of assistance when asked, as confirmed by the manager:

> "I will bump into people and talk to them about how they are going, and then we can sit and go through things in more detail at a later time". The Manager

Participants acknowledged *the Incubator* manager's knowledge of business, ability to understand the issues that small and start-up businesses face and empathise with the situations that tenants found themselves in. One participant described the interaction in this way:

> "[the manager] gives me confidence, not that he just found someone to lease the premises to but he cares about my business and my staff". Participant 1

Other participants also appreciated the approach taken by *The Incubator* manager, as described by one current tenant:

> "He doesn't sit down and talk at you like an accountant or a solicitor would. He will bump into you in the corridor and he will say, 'just come here and have a chat'. Unlike other centre managers, he puts you back as equals. He does it in a personal way". Participant 6

This suggests that the accessibility of management prized by tenants is not just about having an open door policy or being available to ask questions, but in understanding the issues being faced by small business owners and being willing to meet business owners as an equal.

MANAGER INTERVIEW

As a part of the methodology for the study, it was determined that interviewing the manager of the business incubator would allow the researcher to get a deeper understanding of the interaction the manager of an incubator had with tenants and allow for a comparison with responses from the current and former tenants. *The Manager* was forthcoming and was very generous with his time in assisting the researcher.

The first question put to *the Manager* was related to his view on the value of *the Incubator* to the tenants. *The Manager* answered that the overwhelming benefit to tenants was the "*great value for money in terms of office space*" that the facility provided, including, as he put it, "*the ability to move out on their terms, not the*

Incubator's terms". *The Manager* said that the so called "easy-in, easy-out" leasing arrangements were considered important by the tenants, and that flexibility within the facility to grow into larger office space or take on additional offices to accommodate new employees was another advantage.

The Manager described the range of services that *the Incubator* provided to the tenants, saying that he felt that his job was to understand and know everything that was needed in establishing an office, so that the tenant got on with running their business. As he put it: "*doing everything short of running the business for them.*"

This holistic service did have its downside, the Manager said. "Things are too good with services, which are not easily or as cost-effectively replaced outside the Incubator facility". He said that tenants found it hard to leave the facility, and that they struggled after leaving to maintain the level of service that they had grown accustomed to while being in the Incubator. One former tenant described leaving the business incubator to the Manager as being very difficult to manage, and in the end found a commercial facility that he shared with another former tenant to share costs. The Manager said that he maintained contact with owners once they left the facility to ensure that the transition to commercial office space was as smooth as possible.

In terms of interaction with the tenants, *the Manager* said the approach he took was an informal one in terms of assisting the tenants with the development of their businesses. This laissez- faire approach to business advice suited him and, he said, suited his tenants. *The Manager* said he felt that he could have more influence in occasionally raising points with tenants on business issues than through regular or formally structured interviews.

SUMMARY

This chapter described the case study conducted on a university-owned business incubator operating in Western Australia. The business incubator was created in 2001 as a not-for-profit organisation using a Federal Government funding scheme with local partners that included *the University*, a business association and the local government

authority. In 2011, the business incubator organisation reverted as per the terms of the funding agreement with the Federal Government to the ownership of the university.

The case study involved interviewing ten tenants of the business incubator; eight were current tenants and two were former tenants. Data collected from the questionnaire and semi-structured interviews of the tenants were compiled and input into NVivo®9 to allow assessment to be made on individual cases and across cases. Interviews were transcribed and analysed through the software, with codes used to collate text under 'nodes' by identifying themes in responses, using a grounded theory framework analysis approach (Ritchie & Spencer, 1994).

The business incubator manager was also interviewed to assist with a deeper understanding of the interaction that the manager of an incubator had with tenants and allow for a comparison with responses from the current and former tenants.

The results of the interview with *the Manager* as well as the semi-structured interviews conducted with the tenants and former tenants were then described. Four tree nodes were established from the literature and the responses were coded under these nodes to establish:

1. Advantages perceived by tenants/former tenants of an incubator environment
2. Disadvantages perceived by tenants/former tenants of an incubator environment
3. Impressions by tenants/former tenants of the interaction with *the Incubator* manager
4. Motivations of tenants/former tenants for locating within an incubator

The implications of the responses from the current and former tenants and the incubator manager will be discussed in the next chapter.

CHAPTER 5 – DISCUSSION

INTRODUCTION

The results have been used to develop a better understanding of the motivations, perceptions and priorities of tenants in seeking space in an incubator and the influence the process of business incubation, including the role of the manager, has on the development of new start-up small businesses that operate from such facilities. The results are considered below in relation to the specific research questions posed. This chapter also discusses what can be learned from this case study about the role of *the Manager* and the influence a manager has on small business tenant outcomes. Finally, the chapter considers how the results of this case study align or contradict existing business incubation theories and discusses the implications in order to inform the thinking of organisations that might be considering incubation as a strategy for economic development.

RESEARCH QUESTION ONE: WHAT ARE THE MOTIVATIONS OF TENANTS FOR LOCATING WITHIN A BUSINESS INCUBATOR?

As has been noted in Chapter 2, the issue of why tenants enter a business incubator and establish their business has been asked in a number of studies, including Bergek and Norrman (2008), Burnett and McMurray (2008), and Burnett (2009). However, a review of business incubation research indicates that identifying the owners' motivation to move into a business incubator has not been studied as often as, for example, whether the owner makes use of the shared photocopier (ANZABI, 2004; Group, 2003; Mian, 1997; Sipos & Szabo, 2006; Swierczek, 1992; Thierstein & Willhelm, 2001; Udell, 1990). This may indicate that motivation is more difficult to assess or that motivation has not been deemed as important when researching the operations or outcomes of a business incubator.

Responses to this question demonstrated tenant awareness of their own reasons for moving into the business incubator environment. The owners appeared to have

thought out and rationalised their decisions and were clear about the impact of the decisions on the current situations of their businesses.

There were four reasons tenants gave for choosing the business incubator as the location for their business. Each of these is discussed below in order of the most responses received (see Table 4.2).

COMPETITIVE PRICING

Most participants (five out of the eight current tenants and both former tenants) reported that the price of the office space at *the Incubator* was a significant factor for them locating and operating their business from the facility, with this response the first given in each case. This is not surprising given that the price for incubator space is regularly reported in studies as being a critical factor (Burnett, 2009; Hackett & Dilts, 2004b), since a favourable cost for rental or office space frees up funds to be spent on other activities, such as marketing and operations (Storey, 1994).

Despite the insistence of the industry through bodies such as the Business Incubation and Innovation Australia and the National Business Incubator Association in the United States that incubators should not be solely about providing "cheap rent" to start-up businesses, that is frequently the perception and this has been seen as their principle benefit to the operations of the businesses (Bergek & Norrman, 2008; L. Peters, et al., 2004).

Cheap rent reduces the perceived risk of starting a business for the owner, by lowering monthly expenses and reducing the income required to be generated by the business. The business incubator also incorporates the cost of utilities into the price of the office space, allowing for accurate budgeting on the cost of the office without variable outgoings such as electricity that can fluctuate over a year.

However, cheap rent can have an adverse impact on the overall operation of the business incubator in the achievement of its economic development or community goals. Cheap rent allows businesses that may be marginal an increased chance of survival due to the reduced cost of office accommodation, which may artificially create

hope in the mind of the owner that the business is viable in the long term. After the incubation period, the business is forced to move out into commercial office space which increases the fixed costs for the business and this may affect its future viability.

For incubator stakeholders, the issue of cheap rent is a vexed one. By having below commercial rates of rent the business incubator can quickly fill and be seen to be supporting the creation of new small businesses for a community. However, at the other end of the incubation process, the businesses have not had the full rigour of the market during their start-up period and when forced out into commercial rates of rent, are unable to meet these cost demands and either close or move to a home office environment.

This is an issue for stakeholders, as business incubators are frequently created to fill a community with small businesses. For an incubator to be seen as credible under these circumstances, and for it to maintain the support it receives from stakeholders such as local governments or universities, those businesses have to be seen to survive. When businesses exit the business incubator and move home or close, the social contract between the incubator and its stakeholders and community is reduced or broken. This leads to a spiral of reduced financial support for the business incubator. To combat this risk, therefore, it is an incentive for incubators to maintain income by raising occupancy, demonstrating publicly the work it does with businesses, even if this is not always in an entrepreneur's best interest. Too frequently, therefore the focus remains on a cheap rent model, with the incubator manager focussed on occupancy rather than incubating businesses and moving them out to allow another tenant to move in.

The alignment of the financial model of the business incubator on rent for income from tenants is easily skewed by not having the focus on developing a successful and credible business development incubation program that graduates business into the local community, thus maintaining the support of community stakeholders. As can be seen with the incubator under investigation, their low number of business graduates (90 over a ten year period) would indicate that they did not have a strong graduation program. This may be why the majority of existing tenants stated that the price of the rent was so significant for them.

The responses from the tenants confirm that "cheap rent" was an important contributor to their decision to operate from *the Incubator*. However, no one aspect such as the price of rent at a business incubator can be solely used to demonstrate the motivations of tenants to locate their business at the facility.

CONTRAST TO OPERATING FROM HOME

Another significant factor for participants that motivated the decision to locate businesses within *the Incubator* was the challenge of operating an enterprise from home. Home based business literature describes many motivations for the business owner to operate from home, including being risk averse, the convenience, being contented with no aspiration for growth and operating the business from home as a temporary measure (Walker, 2003).

Several participants said their home was too small for their business or that they did not have space to operate, implying that they would otherwise have operated their business from home if that were possible. This response matches findings in similar studies that describe a business incubator as a "half-way house" between an unproven concept operating from home to a fully commercial business operating from commercial office space (Beale, 2004).

Another negative impact of operating a small business from home is the perception by clients and suppliers that the business is just a hobby and not a serious business concern. This aspect was often cited by the respondents in that the business incubator allowed for a proper business address and increased the perceived professionalism of the owners and the business in general.

FLEXIBILITY

Flexibility was cited as an advantage as *the Incubator* allowed tenants to enter and grow on easy-in terms and was equally useful for the former tenants, who were able to leave on easy-out terms when their businesses changed. The term 'flexible space' was

also used by participants to describe their motivation to enter the incubator, both in terms of the easy in, easy out nature of the lease agreement and the ability internally to shift offices or combine offices to increase or decrease space when required.

Flexibility is an important aspect in the mind of a small business owner starting out in their business. Keeping as many options open as possible can be an important factor in success for a start-up business, allowing for changes in the business model as the business progresses and keeping costs lower.

None of the respondents mentioned any advantage of the monthly lease terms on their ability to test their business idea or business model, and they were not led to discuss the issue in this unprompted question. This has previously been identified as an important aspect of business incubation (Lee & Hunt, 2008; Lewis, 2001) in that month-by-month lease terms are believed to reduce the risk to the business owner in starting a new venture and testing a business idea in a commercial setting.

If the business does not develop for the business owner in the way it needs to, then the owner can quickly close the business and leave the business incubator in a matter of weeks. The lack of response around this potential benefit may be the result of businesses being unaware or unable to identify it as a benefit, or that their businesses did not specifically experience that testing process in a way they could articulate.

While flexibility was cited by four participants as a motivator to enter *the Incubator*, just one specifically cited flexibility as an advantage once operating from within *the Incubator*. It could also be the case that the business owners were sufficiently naïve that they were not fully cognisant of fully commercial renting and leasing arrangements. It might also be the case that if it was the first time the business owner had become self-employed, their point of reference would have been from when they were an employee, which is significantly different in regard to financial and operational responsibilities, so again pointing to an element of naivety.

BUSINESS ASSISTANCE

It is useful to note that the participants did not usually raise the issue of business assistance, which is often seen one of the raisons d'ètre of business incubation (Candace Campbell, Kendrick, & Samuelson, 1985; Mian, 1994). This response was given by just two of the eight current tenants and neither of the former tenants. This is surprising from the point of view that business incubators frequently describe themselves as a business development program that comes with office space (Hackett & Dilts, 2008), with the role of business assistance highlighted in promotional material (ANZABI, 2004), yet it was not expressed as a reason for locating the business in this particular business incubator by most participants.

Most did not seem to rate the provision of business assistance as a motivating factor, even though *the Incubator* management and the respondents reported being told from their first enquiry that business support was available. It is arguable that business owners do not understand at the time of entry the impact that business development could have on their business, and that the presence of business assistance in itself should not be relied on as a motivator for businesses to enter incubation. Another reason could again be the lack of small business ownership experience, in that they simply do not know what they do not know, as per the fourth quadrant in the Johari Awareness Model (Hall, 1974) and therefore the distinct advantage of having advice on hand was an unknown to them.

As noted, tenants did not prioritise business development advice before entry; although at least one incubator tenant believed the overall concept of *the Incubator,* including the provision of support, was ideal. This general lack of enthusiasm changes when tenants are asked about the overall advantages of *the Incubator* once they are installed, which will be discussed in more detail in the next section.

WHAT DO INCUBATION THEORIES SAY ABOUT MOTIVATION FOR ENTRY?

The responses from the participants regarding their motivations to enter the business incubator best reflect options theory as described by Hackett and Dilts (2004a).

Options theory asserts that decision makers, in this case the owner of the business, create low cost options to initiate risky investments (starting the business) but do not fully commit to these decisions at the initial stages of the business (Hackett & Dilts, 2004a).

The participants clearly linked the decision of moving into the business incubator to the price of rent at the business incubator. Thus the business owners are choosing the business incubator over other business accommodation options so as to reduce their risk (options) due to the low cost of the facility.

Hackett and Dilts (2004a) apply options theory to the process of selection of possible tenants for the business incubator, using the perspective of the management of the business incubator, rather than the owners of the small businesses wishing to enter the business incubator. In this case, however, their thinking could equally apply to the participants in the study as they weigh up options to reduce risk. While other theories have been applied to business incubation such as social capital theory and networking theory (Bollingtoft & Ulhøi, 2005) and co-production theory (Rice, 2002), they are less applicable in describing the motivations of the business owners to move into a business incubator.

SUMMARY OF FINDINGS FOR TENANTS' MOTIVATION FOR LOCATING WITHIN A BUSINESS INCUBATOR

In respect of research question one, the research shows that the principal motivation for tenants to locate their business within a business incubator was the price for the office space, and that the main objective of the business incubator which was the provision of business advice, was not considered as important at the time of moving into the facility.

This is an interesting finding, given that business incubators promote themselves to their community of stakeholders and potential owners of start-up businesses on the grounds that their purpose is the provision of business assistance that will improve the success of the businesses operating from the facility. If business incubator tenants did

not base their initial decision for locating their business at the incubator because of the business advice on offer, then business incubators will need to reassess the messages they broadcast to potential tenants and to stakeholders, focussing perhaps on other factors.

These other factors, such as the flexibility that the business incubator provided in terms of space to the tenant and issues to do with operating the business from home as an alternative location than the business incubator, were also raised as factors contributing to the motivation of locating the business at the incubator facility.

RESEARCH QUESTION TWO: WHAT ARE THE ADVANTAGES AND DISADVANTAGES PERCEIVED BY TENANTS OF A BUSINESS INCUBATOR?

The case study indicated that the motivations for entering the incubator differ from the specific elements tenants' prize once they have entered. Key advantages and disadvantages perceived by current and former tenants of an incubator are described in more detail below.

BUSINESS ASSISTANCE

While the provision of business assistance was not widely cited as a motivating factor in the entry to a business incubator, it was considered an advantage of operating from a business incubator by four of the tenants, indicating that this element of the business incubator's services was important to their business.

One of the responses — that *the Manager* was always there to guide the business, provide support and act as a sounding board — would seem to justify the argument used by incubators and incubator networks that the provision of office space with business development support is worthwhile and a reason for their creation and support (ANZABI, 2004; von Zedtwitz & Grimaldi, 2006). Still, it does not appear to be the driving factor in a business owner entering an incubator in the first instance.

This difference in response is an important aspect to consider in business incubator operations, including how the business incubator markets itself to potential clients. The business owners did not consider the provision of business assistance as an important motivating factor to move into the business incubator facility, despite the services being is discussed in the initial interview conducted by the manager and again at the induction meeting with the manager upon entering the facility.

This is perhaps understandable, as at start-up of an early venture, the entrepreneur is focussed on developing their own business, managing cash-flow and looking for ways to reduce costs as much as possible rather than considering the less immediate

benefits. Once a business is established within the facility, however, this element of a business incubator's service is valued and considered advantageous, suggesting that the usefulness of advice should not be discounted, even if it will not in itself bring in new tenants. It should also be noted that the significance of the availability of business advice was not universal amongst all of the tenants. For some of the tenants the availability of business advice was a non-issue. Whereas this study did not delve further into the different characteristics (both personal and of the businesses themselves), but it may well be the case that it was only the weaker businesses and the least experienced business owners that availed themselves of the assistance. This therefore again queries the purpose of incubators as real creators of sustainable businesses and generators of employment for regions, as opposed to helping prop up potentially unsustainable new small businesses.

A question to consider at this point would be the effect on the motivations of tenants to locate their business within a business incubator if the price of the office space was increased. By increasing the price to more commercial levels, reducing the benefit of the cost effectiveness of the business incubator as a location for their business, would the issue of business assistance increase as a motivating factor to locate within the business incubator environment or would they choose other, cheaper premises?

LOCATION

The geographic location of the business incubator and its proximity to other business services was not considered as important to the participants as its proximity to their own residential locations or how it suited their own personal workplace needs. Most literature does not raise the issue of the personal circumstances of tenants, however in Burnett (2009), when tenants were questioned as to their motivation to locate their business within the business incubator, the issue of the incubator being close to home and being proximate to other businesses, shopping areas and major roads was a consideration (Burnett, 2009).

Burnett's study found that the geographic location of the business incubator was an important contributing factor, unlike the responses from the tenants in this study that

only considered location to their own circumstances. This could perhaps be due to the different business incubators that were studied, as the incubator in this study was in an outer metropolitan area whereas the incubators investigated by Burnett were mostly inner city locations (Burnett, 2009).

Geographic location is raised in a number of studies when investigating university based business incubators (Auttio & Klofsten, 1998; Guerrero, Toledano, & Urbano, 2011; Mian, 2011; O'Neal, 2005). In particular, the literature suggests there is a reciprocal benefit to the university and the tenants of the business incubator with the geographic proximity of the two institutions.

The benefits include the sharing of knowledge between academic researchers and the owners and staff of the businesses located at the university based business incubators, as well as the sharing of workers, research collaboration benefits and other personal connections and networking benefits between the university and businesses (Guerrero, et al., 2011; O'Neal, 2005). In this study however, due to the nature of the weak relationship between the incubator and the university, there were no reciprocal benefits for any parties.

PROFESSIONAL OFFICE ENVIRONMENT

The provision of a professional office environment for the participants in the case study was an advantage once a tenant had decided to locate the business at *the Incubator*. Participants appreciated the provision of secretarial and reception services, use of office equipment such as a photocopier and facilities such as meeting and training rooms and lunch rooms. These were services and facilities that would normally cost much more for a business to establish and which would not be used very often, which at *the Incubator* can be shared between tenants much more cost effectively.

The issue of whether a professional office lends credibility and eases the operational costs of business is not widely discussed in the business incubator literature but it has been extensively explored in the home-based business literature, though many studies

note the presence of different professional services. Burnett (2009) and Peters, Rice and Sundararajan (2004) did uncover the positive aspects of the services of the business incubator on the motivations of the tenants, but it may be worth further exploring the issue of how a professional business address is advantageous to tenants.

The issue of a professional office is often investigated in conjunction with the motivations of starting a home based business, in particular in relation to the credibility of the home based business (Walker, 2003). Many home based business operators are not perceived to be legitimate if they operate from home, as they are considered more as a hobby or part time venture (Walker, 2003). The tenants in this research reflect this view and discussed the impact that having a professional office location for their business was more preferable for their own credibility with clients than operating from home.

COMPETITIVE PRICING

The price of the office space was the major motivating factor for tenants to locate within a business incubator and it was also cited as an advantage by businesses operating from *the Incubator*. Participants raised the issue of price as an advantage to their business, in particular with regard to the potential growth of the start-up, the space requirements the business may or may not have and the owner's own lack of experience in business creating a cautious approach to decision-making. In particular, tenants said they appreciated the flexibility that came with being able to enter and grow on easy-in terms and was equally useful for the former tenants, who were able to leave on easy-out terms when their businesses changed.

The issue of caution with regard to decision making is linked to a perceived disadvantage of the business incubator environment to the tenants, which was the lack of commercial pressure on the business due to the discounted rent paid. This will be discussed in more detail later.

NETWORKING

A participant who spoke of the value of the business support also praised additional aspects of networking that link tenants into the broader business community, specifically the ability to be linked with potential clients and other complementary service providers. Networking is also a feature valued by a start-up business, in that the credibility provided by *the Incubator* manager is beneficial in generating clients and referrals.

One finding of this study, that networking is valued by tenants, therefore fits well with what would be anticipated by networking and social capital theory.

DISADVANTAGES

The few disadvantages described by the current and former tenants indicate their overall satisfaction with the services and facilities on offer at the business incubator. However, there are some aspects that are raised that indicate that there are potential negative effects from the business incubator environment on the operations of businesses at *The Incubator*. Those specifically raised by participants included that they could outgrow the incubator and that there was a lack of space, but most worrying was the issue of complacency.

One participant acknowledged that there was no urgent need to increase profitability as the rent was so competitively priced. This idea that incubator pricing could reduce the need to generate profits and thus foster a complacent business model is one that should be investigated further.

It is an issue raised by Rice (2002), who questioned the co-production process that supports firm survival but does not assist in growing the firm, before considering the impact of the managerial inputs on business development outputs. The relationship between inputs and outputs will be described in more detail later in this section, but it is useful to note that the same problem observed by Rice can be seen in at least one firm in this study. Although business owners are interviewed prior to entering the

business incubator, and *the Incubator* manager filters potential candidates for office space in terms of their potential to grow and create jobs, business owners can still meet these criteria prior to entry and yet fail to achieve growth expectations once operating from within *the Incubator*. This is because if it is a new business it is 'anticipated' potential rather than actual potential, and it would appear to be the assessment of potential was within the remit of the manager alone, rather than a panel. The challenge for incubators is getting the correct balance of criteria that allow for a reasonable level of 'potential and hope' without being too onerous yet also not being too easy so as to allow for unsustainable enterprises to start a new enterprise, with little realistic hope of it being successful. It would be worrying if the very mechanism set up to foster and develop businesses also acted as a growth inhibitor.

Another limiting factor is the physical size and internal flexibility of the actual business incubator building itself. The former tenants of the business incubator and current tenants on a fast growth curve indicated that the physical limitations of the building would force them to relocate, perhaps prior to their own business development needs. This is where additional business programs such as incubation without walls or mentoring to external businesses to the business incubator could allow business development assistance to be continued to be provided without being housed within the business incubator building.

Incubation without walls is considered a form of business incubation that occurs outside of the business incubator facility but includes the business incubation program of business advice and mentoring. Tenants of a business incubator without walls are essentially virtual tenants, in that they do not locate their business operations within the business incubator facility.

Disadvantages of operating a business within a business incubator have been rarely discussed in relation to business incubator theory, as most theories investigate the positive aspects of business incubation on small business formation and growth, job creation and technology commercialisation (Hackett & Dilts, 2004b). The findings in this study should therefore contribute to the body of knowledge in this area, indicating an issue that should be guarded against when developing business incubation programs.

WHAT DO INCUBATION THEORIES SAY ABOUT THE ADVANTAGES AND DISADVANTAGES PERCEIVED BY TENANTS?

What is interesting about much of the literature that exists on the internal operations of incubators is the similarity of the services provided and the commonality in the general operations – if not the specifics – of most incubators. Bergek and Norman (2008) note that most incubators supply roughly the same administrative and other services which makes differentiating between models on the basis of what is available to tenants ineffective. They also consider main incubator model components – which they describe as selection, infrastructure, business support, mediation and graduation policies – to be common to most forms of incubation (Bergek & Norrman, 2008).

They focus on business support and mediation as the main elements that allow differentiation between incubator models. As can be seen from the findings of this research question, business support was considered an advantage by tenants, even if, as is discussed later, it is not offered on a strong intervention basis. Just as importantly, the 'mediation' referred to by Bergek and Norman (2008) was appreciated by tenants. Mediation, under their definition, refers to how the incubator connects incubatees to the outside world and to each other, through network mediation and institutional mediation. They define network mediation as slightly different to networking, as the incubator acts as an intermediary to build networks that act as support and expertise for its business assistance activities. Institutional mediation is also important, and is also apparent in this case study. Bergek and Norman (2008) describe this form of mediation as helping incubatees understand, interpret and influence the demands of regulations and laws, in the process increasing "the visibility, credibility and understandability of incubatees in the eyes of external actors" (Bergek & Norman, 2008, p.25). This fits well with the advantage identified by the tenants that the incubator provided credibility through its location and status.

The importance of networking in a broader sense is referred to in a number of studies, and is part of the intangible services that a business incubator provides to a community. Business incubators are a hub for business networking, developing social capital with the management of the business incubator and with other tenants. Social capital that is created within the business incubator assists the tenants to develop their

businesses by the creation of learning opportunities, knowledge sharing and relationship development (Bollingtoft & Ulhøi, 2005).

Rice's investigation of how co-production processes were conducted at various incubators identified that the managers with the lowest impact relied solely on reactive, episodic intervention and "left it to the companies to develop the capacity over time to mature beyond survival" (Rice 2002, p.182). But Rice also identifies that for some entrepreneurs, the incubation co-production process can be engaged in yet they still experience a relatively low impact.

These entrepreneurs, which Rice calls Group II entrepreneurs, benefit from the supportive environment offered by an incubator and need time to mature, but also are not ready to engage and may underestimate the value of business services. He notes that no entrepreneur applies for admission to an incubator unless they have substantial challenges that they must face to grow out of survival mode, but while all entrepreneurs have a lot to gain from engaging in co-production activities, their perception of the value of this engagement varies widely.

Given their unwillingness to engage in business assistance, and time needed to mature, Rice recommends that it is appropriate to adopt a passive and reactive co-production approach to this group, and allow the manager to focus their proactive and continual intervention on up-and-comer companies (which he describes as those with resource gaps but a willingness to fill the gaps through engagement).

The lack of engagement by companies barely progressing past the survival stage cannot be held as a criticism solely of managerial processes, therefore; there are some tenants who have genuine gaps and need support, but who will not, until they mature, engage in the incubator activities that could change these circumstances.

SUMMARY OF FINDINGS FOR THE ADVANTAGES AND DISADVANTAGES PERCEIVED BY TENANTS OF A BUSINESS INCUBATOR

Considering the findings, then, of research question two, the principal advantage perceived by tenants of the business incubator was the provision of business assistance in the development and growth of their businesses. Although not considered important before entering the business incubator, once the tenant is operating from the incubator facility, this aspect of the services provided by the incubator was rated as being the most important.

The issue of price, raised as the most important motivating factor for moving into the business incubator, was raised as an advantage in terms of reducing costs, but more interestingly, was raised as a disadvantage as it reduced the pressure to strive for profits and business growth.

Other aspects of the business incubator operations including networking with other tenants and the ability to easily enter and exit the facility were also considered as being advantageous by the tenants.

RESEARCH QUESTION THREE: WHAT IMPRESSIONS DO TENANTS HAVE OF THEIR INTERACTION WITH THE BUSINESS INCUBATOR MANAGER?

The relationship between the incubator manager and the tenant could determine the outcome for the tenant firms and leads to the output of business incubation, the start-up and growth, development or commercialisation of technology of the tenanted firm. In this particular study, in which the incubator has a link to a university, it is also worthwhile examining whether this has an implication in the interaction described by tenants.

Research question three specifically looked at the impressions that tenants and former tenants had of their interaction with the business incubator manager, but as part of the study, the responses of the manager were also sought, and these are reflected below.

TENANT IMPRESSIONS

As discussed in the results chapter, participants gave mixed answers to specific questions on the value of the business advisor in contrast to, for example, other professionals with whom they interacted, such as their accountant. Four respondents, all current tenants, answered very positively, citing a high level of interaction with the business incubator manager, while six indicated that they had almost no interaction and needed no assistance to build their business.

The question of why some of the participants did not believe they required assistance to build their businesses could be attributed to the business progressing in line with the expectations of the business owner. If the business is generating sales and profits that meet the business owners' expectations, then the offer of business assistance to develop the business would not be required from the business manager.

The phrase used to describe the incubator manager's approach to interacting with the tenants was *laissez-faire* — in other words, he was inclined to leave participants alone

unless they specifically sought out advice or help. This was found to be appropriate for some of the tenants, providing the right level of intervention without being too formal.

This suggests that the aspect of accessibility prized by tenants in their manager is not just the presence of an open-door policy or availability to ask questions, but his understanding of the issues being faced by small business owners and willingness to meet business owners as a social equal, someone who understands the circumstances business owners face at the start of their business.

It is an issue when studying a self-selective group that they may have agreed to be interviewed because they feel strongly — either positively or negatively — about the issue in question, and it may be that this is the case here. But the clearly positive result from participants who discussed the quality of *the Incubator* management and its role in supporting their businesses seems to indicate that this is seen as a helpful factor in the success of the enterprises.

In this situation, it is also worth noting that tenants were very positive about the *laissez-faire* approach to assistance, provided to tenants on request rather than being 'pushed' on businesses. This perhaps suits the Australian context and is appreciated by tenants who do not want to be told what to do or have their hands held, although *the Manager* notes that *the Incubator* management was able to do "everything short of running the business" for tenants. This reflects perhaps a divergent view between tenants and the incubator manager over how much interaction really takes place.

It is worth noting that although participants did not discuss the role of the manager at length, they did dwell on specific benefits that the manager offered their business, some of which have been addressed above under discussion of advantages. In particular, the ability of the manager to provide credibility, extend his networks to business owners and link to potential clients was cited as being particularly useful, and underscores the role of the manager in providing networks that can link the tenant to the broader business community or generate potential client references.

This positive response is reflective of the advantages of networks identified by Johannisson (1988) who describe the networks as being activated when faced with difficulties or when opportunities arise. The tenants also appreciated the wider

network of businesses engaged in *the Incubator*, drawing on their experiences and generating new contacts. The network is part of the culture of *the Incubator*, bound together with the investment of time put in by the manager, or, as Johannisson puts it, "neither the frequency nor the regularity of exchanges necessarily indicate the potency of reliability of the ties. Rather, the strength of a tie is related to the investment of time and emotion" (Johannisson, 1988p 85).

MANAGER'S IMPRESSIONS

Not surprisingly, *the Manager* was far more reflective on his role than the tenants; discussing at length recent changes to the organisation, how he perceived his role and responsibilities, and what he felt he could do to maximise support for tenants. His description of his role as providing "high-touch support" clearly defines his interaction — or intended interaction — in contrast to the role either of a landlord or as an ordinary business advisor. It is what leads the manager's position to transcend these other roles and is important in the successful operation of *the Incubator*. *The Manager's* belief is that business incubation is a business development program that comes with office space, rather than one or the other. He set out to design an internal culture within the facility that would support and foster businesses through the provision of support, even if tenants did not initially seek this out.

Interestingly, when *the Manager* was asked about his own impressions of how much impact an incubator manager could have on both individual businesses and start-up business tenants as a group, he believed there was a significant role that could be played — but that was not always pursued. In particular, although *the Manager* believed the business incubator could make a major difference for individual firms, the local economy and in improving the broader business environment, this potential remained at least partly unfulfilled given constraints of floor space and the changes in ownership of *the Incubator*.

The Manager was asked about the contribution the business incubator had made to economic development in the local region, and whether he believed it was a good tool to achieve this. He believed that business incubation was best placed in areas of

economic decline, as a tool for regeneration of a community and his experience of business incubation in the United Kingdom was that it was useful to help a region transform from an area dominated by large employers to one with a large number of small businesses, making use of the skills of those former employees and training them to operate their own small businesses.

The Manager said that having *the Incubator* in the region was creating local employment for local people and he thought its greatest impact was to reduce the number of people travelling out of the area to jobs elsewhere. *The Manager* initially estimated 200 jobs had been created by the businesses that had operated from *the Incubator* and that this contribution was important to the local community and economy. It should be noted that later in the discussion, this figure was put closer to 1000.

Job creation is seen as one of the important outcomes from a business incubator of this type in a local community, and a result of 1,000 jobs created over the ten years of the incubator's operations would be a good result. However, little effort has been placed in measuring this impact in a systematic way by the *Incubator* and the number cannot be easily verified.

The Manager said that an additional influence that the business incubator had had in the region was through its support for smaller business. *The Incubator's* presence had begun to influence local government planners and property developers, as they had seen the success of a small office facility in the area. *The Incubator* had increased demand for this type of office space among local businesses that had graduated from the facility and who were looking for similar space to that which they had occupied in *the Incubator*, however this claim is difficult to verify given the small number of businesses that have graduated from the facility in recent years when compared to the number of small businesses that operate in the area where the business incubator is located.

The Manager also indicated that business incubators provided support that suited some types of businesses more than others; for example retail, hospitality and manufacturing were automatically excluded due to the type of space available. This was a constraint that was not easily overcome. He believed that the high-touch support

that a business incubator provided was unique and contrasted it with other business development interventions such as the Small Business Centre (SBC) program funded by the State Government of Western Australia, but there was a gap between the two services that was not being met. He said he believed there should be more in-depth interaction with the owner of the business before they entered into the business incubator, which could lead to a deeper and more productive business relationship.

What can be seen from *the Manager's* comments and the history of *the Incubator* is that while the facility is owned by *the University* it has operated as an autonomous entity since its inception and therefore may not fit the 'university business incubator' niche as neatly as those facilities where colleges or universities are deeply embedded in the management. This also means the facility has not been able to access the advantages of being part of the university until recently, as is the case with the career hub relationship.

Having a stable and capable manager is also clearly important. *The Manager* has been in the role for seven years, compared to the rapid turnover experienced in the first two years of operation in which five managers were employed. This stability provides certainty to tenants and is necessary for the smooth operation of *the Incubator*.

HOW DO IMPRESSIONS OF THE ROLE OF THE BUSINESS MANAGER AND HIS IMPACT ON ENTERPRISE DEVELOPMENT FIT WITH BUSINESS INCUBATION THEORIES?

The findings relating to the relationship between the incubator tenants and *the Manager* agreed with the research findings of Rice (2002), who used co-production theory to investigate the outputs of business incubation. Co-production theory describes the interaction between the business incubator manager and the incubator tenant in terms of the relationship between a consumer of business assistance and a producer of business assistance, modified by factors such as the resources available to the business incubator.

Rice (2002) describes three types of interactions between the incubator tenant and the incubator manager; reactive episodic, proactive episodic and proactive continual. In this case, participants and *the Manager* described their own interactions at *the Incubator* as reactive episodic as the most common method used of providing business assistance.

Rice (2002) found that this form of interaction, although beneficial to the tenant firms, produced the least response of business improvement. . He measured impact on the business as rated by incubator managers and tenants on a five point scale from negative impact to critical impact. Business incubator managers that invested more time in co-production were found to have a greater impact on the businesses being incubated. In addition, even greater impact was exhibited by incubated firms when incubator managers invested more time per interaction.

Rice (2002) observed that the higher impact incubator managers assisted tenant firms with greater time and resources at resolving a particular issue with a tenant, but also provided additional support over time to ensure that the tenant has resolved the issue and an appropriate outcome has been achieved.

Rice (2002) contrasts business incubation with other business development programs such as small business development centres, mentoring and training programs and chambers of commerce and industry, and describes them as being reactive to the needs of small businesses. This also reflects *the Manager's* view that the support offer he has created at the business incubator is, as he says, "high touch" with more interaction than these other programs. However, Rice would categorise the interaction within the Incubator as reactive episodic as performed by the incubator manager, and that although positive to tenant firms, is likely to produce the least level of benefit when compared to a proactive continuous interaction (Rice, 2002).

Another framework that is useful to consider in understanding the role of the business manager in this case study is that of Bergek and Norman (2008), who identify the lack of theoretical basis for incubator best practice and develop a framework that describes and distinguishes between different incubator models. They argue that since most incubators seem to supply roughly the same general administrative services, shared office space, facilities-related services and equipment, while also having similar policies

on intake and graduation, that it is the level of business support and mediation that are the differentiators between incubator models. They rank incubators on a scale of managerial intervention, that depends on whether "they see themselves as managers of the incubation process or as external facilitators of a process primarily managed by the incubatees themselves" (Bergek & Norman, 2008, p.24). Bergek and Norman's framework starts at the *laissez-faire* end of the scale, in which incubatees are left to themselves and provided with little assistance unless they take the initiative, to *strong intervention* in which the ventures are guided through the incubation process by the incubator staff and other complex management teams.

Using the Bergek and Norman (2008) framework, therefore, *the Incubator* sits towards the *laissez-faire* end of the scale, and while *the Manager* may reach out to tenants on a sporadic basis, he is not as intervention-led as other incubator managers may be.

SUMMARY OF FINDINGS FOR THE IMPRESSIONS TENANTS HAVE OF THEIR INTERACTION WITH THE BUSINESS INCUBATOR MANAGER

Overall in response to research question three, tenants found the interaction with the manager a positive one that contributed to the development of their businesses. The tenants believed that the interaction was on their own terms and that they could seek advice whenever they needed from *the Manager*. The tenants also commented on the networking opportunities created by *the Manager* that added value to the tenants' businesses.

The Manager believed that he was able to meaningfully contribute to the development of the tenants' businesses by interacting with them regularly and when required. He believed that the business incubator under his leadership had made a significant addition to the economic development of the region in which it operated and that there was more to be done with the newly established relationship with *the University* which owned the facility.

CHAPTER 6 – CONCLUSION

ADDRESSING THE RESEARCH QUESTIONS

This study sought to answer three key questions that were designed to gain a better understanding of the influence business incubation has on developing new enterprises. The research questions were:

1. What are the motivations of tenants for locating within a business incubator?
2. What are the advantages and disadvantages perceived by current tenants and former tenants of a business incubator?
3. What impressions do tenants and former tenants have of their interaction with the business incubator manager?

The research showed that the principle motivation for tenants to locate their business within a business incubator was the price for the office space and not the business development assistance that is the primary service of the business incubator.

Once operating from within the business incubator, the principle advantage perceived by tenants of the business incubator was the provision of business assistance in the development and growth of their businesses. The only disadvantage raised was rental price as it reduced the pressure to strive for profits and business growth on the tenant businesses.

The interaction with the manager was found to have a positive impact on the tenant businesses and contributed to their development. The tenants believed that the interaction was on their own terms and that they could seek advice whenever they needed from the manager. The manager believed that he could add value by assisting the tenants directly, with networking them together and introducing tenants to other service providers and businesses when required.

Collectively, these findings indicate the influence business incubation has on businesses located within the business incubator. They indicate that businesses operating within a business incubator see and understand the benefit to their businesses and are happy with their decision to locate and start their newly formed business from the facility.

Further research investigating the level of motivation of key factors would benefit the field of incubator research and operations.

These are aspects of university based business incubation that were not observed in the current research and were not raised by the tenants interviewed. This could be an area of activity that the management of the business incubator could look into to deliver tangible benefits to the tenants and to the university owner of the business incubator.

IMPLICATIONS FOR THEORY

Business incubation has struggled to find a theoretical basis for its operations and purpose for some time, with multiple management theories being employed by researchers to describe the many aspects of business incubators; their establishment, management, the interactions within and without the facility and the success (or failure) of graduating businesses and the overall impact of the incubator on economic development.

What this study shows is that different theories explain different stages of tenant businesses interaction with the business incubator. Options theory as described by Hackett and Dilts (2004a) clearly explains the process that potential tenants undertake to determine to locate their business within the business incubator.

Once operating from the business incubator, Rice's (2002) use of co-production theory in which the interaction between the manager and the tenant produces improved business performance clearly describes the process of business incubation occurring within the incubator facility. Co-production theory also describes the passive and

indirect form of co-production generated from the use of shared office services and facilities such as photocopiers, reception and meeting rooms.

This linking of theory to the stages of incubation is shown below in Figure 6.1

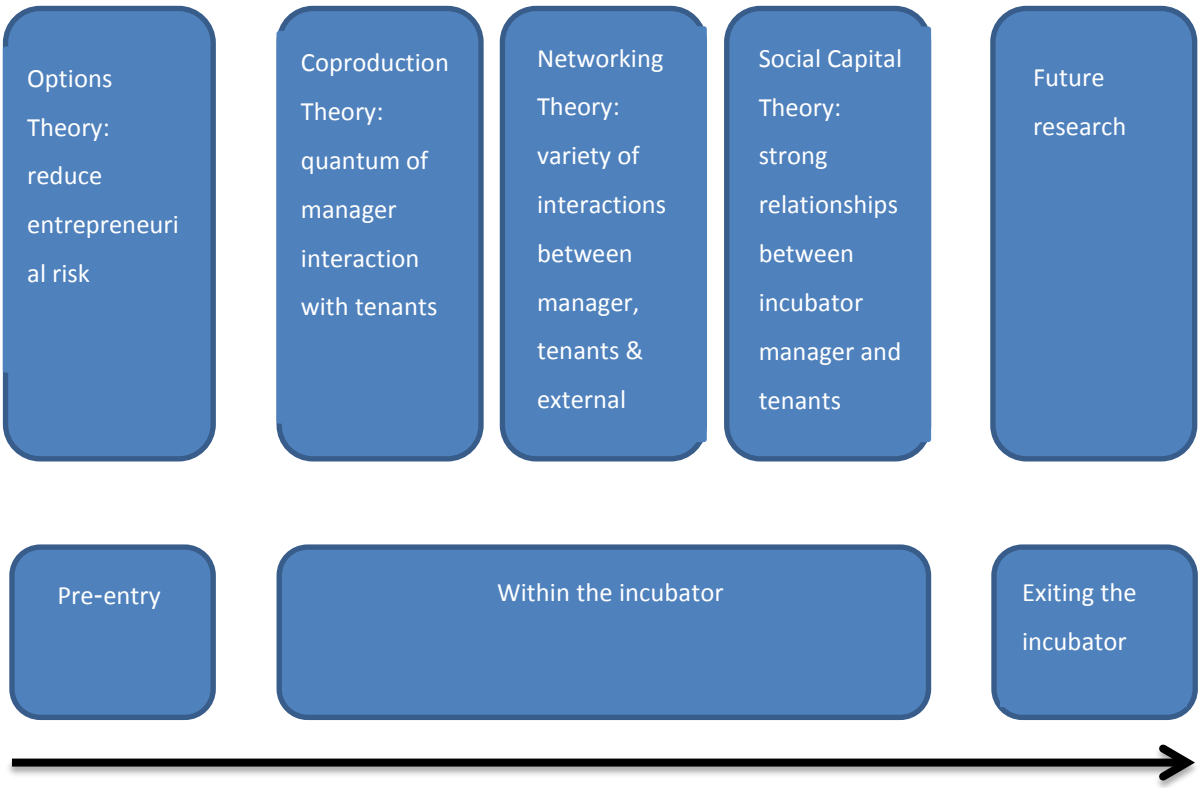

Figure 6.1: Theory explaining tenant interaction over time with the business incubator

By concluding that no one theory can explain the complex interactions occurring within business incubator, then the ability to explain the different stages of business incubation with theory that reflects the evidence, allows for the creation of a model of business incubation that can be used to identify and inform practitioners and stakeholders of business incubation about what is occurring and how to improve the interactions at each stage of development of an incubated business.

This model of the theoretical underpinnings of the business incubation process has the opportunity to inform further research into the processes when businesses exit a business incubator. The exit process often referred to as a business graduation from a business incubator has been overlooked in the literature and in theory development and was not addressed in this study.

IMPLICATIONS FOR PRACTITIONERS

There were many findings from the study that provide guidance to incubator managers on how to better operate and manage their business incubator organisations. In particular, the identification of different stages of business incubation, that require different management and marketing efforts to assist potential and existing tenants.

When attempting to attract tenants and promote the business incubator to start-up small businesses, the business incubator manager has a number of key messages to convey. Potential tenants, who are trying to keep costs down and limit their risks, should be promoted to by highlighting the cost effectiveness of the incubator facility as a location to operate their business from, the proximity and convenience to the potential tenant's home address and that flexibility in terms of easy-in terms and space to grow the business is available.

Little effort should be put into promoting the business development benefits to potential tenants and how successful the business incubator is in growing new firms. Although these are messages that traditionally stakeholders want to hear and expect to be the selling points for the business incubator, these are not the messages that business owners want to focus on. Stakeholders should be informed that any promotion of the business incubator to potential tenants that stakeholders might also come across will focus on aspects of the incubator that are attractive to start-up small business owners, thus managing any potential conflict between expectations.

Once the business owner is located within the business incubator and is operating their business, the business incubator manager should put all their effort into developing a proactive and long-term engagement program with tenants who are prepared to

engage, and use these to model the benefits of engagement to those unwilling to seek out assistance. By focusing proactive intervention on business owners most receptive and in need of assistance, the manager's time should be maximised. Actions should also be taken to deliberately build networks within and without the incubator.

Deliberate engagement over a long period of time will produce better results for the tenant businesses and improve the operations of the business incubator. Other aspects such as a professional office services such as reception and secretarial services, shared office equipment and meeting rooms are also important and contribute to the success of the tenant firms.

IMPLICATIONS FOR POLICY

This study raises a number of issues that should be considered in a wider policy debate within Australia regarding assistance to the small business sector and what economic outcomes can be generated from SME development.

Business incubation in Australia initially grew out of employment policy, looking to address rising unemployment in the late 1980s. With the restructuring of the Australian economy, the policy sought to address the loss of safe and secure employment in corporate or government entities and help people move to self-employment and contracting arrangements.

Business incubation was again used as a tool for economic restructuring when funding from the sale of Telstra in the late 1990s was used to create ten technology business incubators with the aim of accelerating the information technology industry in Australia.

In other OECD countries, business incubation has been developed from industry policy, looking to address economic development issues, or research policy, in order to enhance the transfer of research and technology from the university sector in partnership with business and industry.

Incubation has, therefore, played a part in different policy approaches to economic problems. What this study does is indicate two things: that incubation is still relevant to the core market of small to medium entrepreneurs as a way of assisting them tackle the initial challenges to their business, and that judging incubation success on a moment in time may not be entirely useful.

The first implication is reinforced by the positive response by tenants to the provision of business assistance in the growth and development of their business. They appreciated the relaxed terms of the interaction and the nature of their interaction with the manager. In this way, we can see that SMEs can benefit and appreciate the use of incubation as a way to strengthen their enterprise.

The second implication is based on the changing nature of the tenants' perspectives over time. While few may have believed they would enter the incubator for the purposes of assistance, this shifts after a period within the incubator. A measurement of incubation success that captures one or other of these moments in time is not seeing the whole picture, therefore. It would be wiser for policy makers to take a long term view of the attitudes of tenants, both present and former, before drawing specific conclusions about the effectiveness of the incubation program.

Finally, one of the criticisms of small businesses by policy makers is their lack of attendance and engagement in other types of policy outreach – they are hard to find, hard to attract and hard to work with.

If we consider the underlying position voiced by businesses that show they are attracted to incubation by rent rather than the higher-level assistance options, then we can better tailor our programs to lure them in with an offering they want before we give them the service we believe they need. It also allows those within incubation to adjust their expectations. Businesses may not be banging down our doors demanding help but they may well enter for the cheaper rent and stay for the assistance provided.

SUMMARY

There are key learnings that emerge from the case study and interviews that indicate the impact *the Incubator* has had on new enterprise development. While the results provide insight into the research questions, they are limited by the size and scope of this study — however there is considerable similarity across sources in each response.

1. What are the advantages perceived by tenants/former tenants of an incubator environment

Key learnings:

The provision of business assistance becomes an important service once the business owner is located within the business incubator, - for some but not all business owners - , and they see this as an advantage, along with the provision of flexible office space. Flexibility is important in a physical sense as it allows businesses to grow and flexible terms are important, as they enable the tenant to outgrow the facility and leave or withdraw if owner-managers fail to meet their growth objectives on easy-in, easy-out terms.

2. What are the disadvantages perceived by tenants/former tenants of an incubator environment?

Key learnings:

The same benefits that businesses identify as advantages of being within an incubator, such as flexibility, small spaces and a competitive rental cost, can — in some cases — be disincentives for growth and additional entrepreneurial activity, as they reduce the pressure on business owners to perform. This is important as it is counter to the goals of an incubator to act in a way that inhibits growth; incubators should safeguard against this phenomena perhaps by instituting a model in which support declines or changes over time coupled with strong graduation practises that empower the owner-managers.

3. What are the impressions of tenants/former tenants of the interaction with *The Incubator* manager?

Key learnings:

A good incubator manager is prized by the tenants, but, as found by Rice (2002), some tenants will appreciate the efforts and input of the manager more than others, and it is the role of the business incubator manager to develop a culture of knowledge sharing between him and the tenants and between the tenants to assist in achieving the highest potential of each business.

4. What are the motivations of tenants/former for entering into an incubator?

Key learnings:

Business owners are motivated to minimise costs and keep options open at the beginning of their ventures. The business incubator offers these elements to prospective tenants as well as business development assistance, but this is not what the tenants are looking for at the first instance. Instead, price, flexibility and the contrast to the circumstances they experience when operating from home were stronger motivators.

In conclusion business incubation in Australia is at a cross roads. There is sufficient global evidence to suggest that assisting new ventures within a nurturing environment does pay dividends in terms of the two key areas of business sustainability and job creation. Unfortunately, Australian small business policy does not align with this evidence; nor has sufficient effort been undertaken to find out this is an opportunity missed within the Australian context, or if there is a different economic circumstance at play in Australia that makes incubation less effective.

The individual evidence provided by this case study adds to the body of knowledge on this issue and concurs with other research that has found there are many positives to business incubation. Whereas the qualitative nature of this research did not allow for hard empirical data to substantiate specific numbers of new jobs created or wealth generated for specific regions, it did allow for some in-depth analysis of the motivations and perceptions of incubator tenants and an incubator manager, with the

overriding endorsement of the value of business incubation. It is hoped that the value of this type of business assistance, evidenced by this study, does again become a priority for governments to fund in the not too distant future.

REFERENCES

Abetti, P. A. (2004). Government-supported incubators in the Helsinki region, Finland: infrastructure, results and best practices. *Journal of Technology Transfer, 29*(1), 19-40.

Al-Mubaraki, H. M., & Busler, M. (2010). Business Incubators : Findings from a worldwide survey and guidance for the GCC states. *Global Business Review, 11*(1), 1-20.

Aldrich, H., & Zimmer, C. (1986). Entrepreneurship through social networks. In D. Sexton & R. Smilor (Eds.), *The Art and Science of Entrepreneurship*. Cambridge, Massachusetts: Ballinger Publishing Co.

Allen, D. N., & Weinberg, M. L. (1988). Emphasis in incubator programs on site development is misplaced in light of the management assistance needs of entrepreneurs. *Public Administration Quarterly, 12*(2), 196-215.

Alvarez, S. A., & Barney, J. B. (2010). Entrepreneurship and epistemology: The philosophical underpinnings of the study of entrepreneurial opportunities. *The Academy of Management Annals, 4*(1), 557-583.

Anselmo, P. (2009). Batavia's business incubator celebrates 50th anniversary, *The Batavian*.

ANZABI. (2004). *Incubation Works: Case studies of Australian small business incubators and their impacts*.

Arena, P., Adams, J., Rhody, S., Noyes, K., & Noonan, M. (2008). Construction Grants Program Impact Assessment Report. Vol. I: Report on Investigation and Results and Vol. II: Peer Reviewed Impact Assessment Paper: Prepared for the Economic Development Administration by Grant Thornton in partnership with ASR Analytics, Sept.

Atherton, A., & Hannon, P. D. (2006). Localised strategies for supporting incubation: Strategies arising from a case of rural enterprise development. *Journal of Small Business and Enterprise Development, 13*(1), 48-61.

AusIndustry. (2003). Incubator Funding Scheme: Guide to Proponents. Canberra, Australia.

AusIndustry. (2012) Retrieved 21st May 2012, from www.ausindustry.gov.au/programs/small-business/besb/Pages/default.aspx

Australian and New Zealand Business Incubator Association. (2004). *Incubation Works: Case studies of Australian small business incubators and their impacts*.

Australian Bureau of Statistics. (2010). Counts of Australian Businesses, including entries and exists June 2007 to June 2009. In A. B. o. Statistics (Ed.), (Vol. Cat. No. 8165.0). Canberra.

Auttio, K., & Klofsten, M. (1998). A comparative study of two European business incubators. *Journal of Small Business Management, 36*(1), 30-43.

Baron, R. A., & Shane, S. A. (2008). *Entrepreneurship: A process perspective* (2nd ed.). Mason, Ohio: South-Western Pub.

Barrow, C. (2001). *Incubators: A realist's guide to the world's business accelerators*. Chichester: Wiley.

Beale, H. B. R. (2004). Home-based business and government regulation. Washington, D. C.: Small Business Administration.

Bearse, P. (1998). A question of evaluation: NBIA's impact assessment of business incubators. *Economic Development Quarterly, 12*, 322-333.

Bergek, A., & Norrman, C. (2008). Incubator best practice: A framework. *Technovation, 28*(1/2), 20-28.

Bhabra-Remedios, R., & Cornelius, B. (2003). *Cracks in the egg: improving performance measures in business incubator research.* Paper presented at the 16th Annual Conference of Small Enterprise Association of Australia and New Zealand, University of Ballarat, September-October.

BIIA. (2008). Leveraging the stock of business incubators in Australia: Developing a new approach: Business Innovation and Incubation Australia.

Birrell, S., & Waters, L. (2007). The role of mentoring and peer support in contributing to perceived progress towards small business success: a cross sectional study. *International Journal of Organisational Behaviour, 12*(1), 33-48.

Blundel, R. (2007). Critical realism: a suitable vehicle for entrepreneurship research. In H. Neergaard & J. P. Ulhøi (Eds.), *Handbook of Qualitative Research Methods in Entrepreneurship* (pp. 49-78). Cheltenham, United Kingdom: Edward Elgar Publishing.

Bøllingtoft, A. (2007). A critical realist approach to quality in observation studies. In H. Neergaard & J. P. Ulhøi (Eds.), *Handbook of Qualitative Research Methods in Entrepreneurship*: Edward Elgar Publishing.

Bollingtoft, A., & Ulhøi, J. P. (2005). The networked business incubator - leveraging entrepreneurial activity. *Journal of Business Venturing, 20*, 265-290.

Bolton, J. (1971). *Small firms: Report of the committee of inquiry on small firms*: HM Stationery Office.

Bolton, J. E. (1971). Report of the Committee of Inquiry on Small Firms. London, United Kingdom.

Bonoma, T. V. (1985). Case research in marketing: opportunities, problems, and a process. *Journal of marketing research, 22*(2), 199-208.

Boyd, K. (2006). Developing a Business Incubation Program – Insights and advice for communities *NBIA Publications*. Athens, Ohio.

Brown, L. R., & Erwee, R. (2002). *Using case study methodology to research knowledge generation and transfer in international business networks.* Paper presented at the 18th Industrial Marketing and Purchasing Group Conference, Perth, Australia.

Bruner, J. S. (1966). *Toward a theory of instruction* (Vol. 59). Cambridge, MA: Belknap Press.

Bull, I., & Willard, G. E. (1993). Towards a theory of entrepreneurship. *Journal of Business Venturing, 8*(3), 183-195.

Burnett, H. (2009). *Exploring the parameters for the optimum funding of Australian incubators from an incubator manager perspective.* Doctor of Philosophy, Swinburne University of Technology, Melbourne, Australia.

Burnett, H., & McMurray, A. J. (2008). Exploring business incubation from a family perspective: How start-up family fi rms experience the incubation process in two Australian incubators. *Small Enterprise Research: The Journal of SEAANZ, 16*(2), 60-75.

Campbell, C., & Allen, D. N. (1987). The small business incubator industry: micro-level economic development. *Economic Development Quarterly, 1*(2), 178-191.

Campbell, C., Kendrick, R. C., & Samuelson, D. S. (1985). Stalking the Latent Entrepreneur: Business Incubators and Economic Development. *Economic Development Review, 3*(2), 43-49.

Carrera, D., Meneguzzo, M., & Messina, A. (2006). *Social Enterprise Incubators: The Italian Experiences.* Paper presented at the Third Annual UK Social Enterprise Research Conference", London South Bank University, England.

Centre for International Economics. (2009). ITS for WA: government advisory capabilities to meet WA's innovation, technology and science needs (pp. 101). Canberra.

Chalkley, B., & Strachan, S. (1996). Small business managed workspace: A follow-up study of former tenants - where are they now? *Journal of Property Research, 13*(2), 161-174.

Chandra, A., & Fealey, T. (2009). Business incubation in the United States, China and Brazil: A comparison of role of government, incubator funding and financial services. *International Journal of Entrepreneurship, 13*(Special Issue), 67-86.

Chetty, S. (1996). The Case Study Method for Research in Small-and Medium-Sized Firms. *International Small Business Journal, 15*(1), 73-85.

Coll, R. K., & Chapman, R. (2000). Choices of methodology for cooperative education researchers. *Asia-Pacific Journal of Cooperative Education, 1*(1), 1-8.

Commercialrealestate.com.au. (2012) Retrieved 24th May 2012, from www.commercialrealestate.com.au

Cooper, C. E., Hamel, S. A., & Connaughton, S. L. (2012). Motivations and obstacles to networking in a university business incubator. *The Journal of Technology Transfer, 37*(4), 433-453.

Cooper, C. E., Hamel, S. A., & Connaughton, S. L. (2012). Motivations and obstacles to networking in a university business incubator. *Journal of Technology Transfer, 37*, 433–453.

Cousins, C. (2002). Getting to the" Truth": Issues in contemporary qualitative research. *Australian Journal of Adult Learning, 42*(2), 192-204.

CSES. (2002). Benchmarking of business incubators *Centre for Strategy and Evaluation Services, European Commission Enterprise Directorate General*. Brussels, Belgium: European Commission.

DCITA. (2005). Building on information technology strengths (BITS) incubator program (including the BITS Intelligent Island incubator) Annual Report 2003-04. Canberra, Australia: Department of Communications, Information Technology and the Arts.

DCITA. (2006). Information and Communications Technology Incubators Program (ICTIP) Annual Report 2004-05 (pp. 57). Canberra, Australia: Department of Communications, Information Technology and the Arts.

Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of Qualitative Research*. Thousand Oaks, California: Sage Publishing.

Department of Innovation Industry Science and Research. (2008). Venturous Australia. In Cutler and Company Pty Ltd (Ed.), (pp. 228). Canberra, Australia.

Department of Innovation Industry Science and Research. (2010). *Small business and independent contractors fact sheet*. Canberra: Australian Government Retrieved from http://www.innovation.gov.au/Section/AboutDIISR/FactSheets/Pages/SmallBusinessFactSheet.aspx.

Dyer, W. G., & Wilkins, A. L. (1991). Better Stories, Not Better Constructs, to Generate Better Theory: A Rejoinder to Eisenhardt. *The Academy of Management Review, 16*(3), 613-619.

Easton, G. (2002). Marketing: a critical realist approach. *Journal of business research, 55*(2), 103-109.

Easton, G. (2010). Critical realism in case study research. *Industrial Marketing Management, 39*(1), 118-128.

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review, 14*(4), 532-550.

Erlewine, M. (2007). *Measuring your business incubator's economic impact: a toolkit*. Athens, Ohio: National Business Incubator Association.

Fang, S.-C., Fu-Sheng Tsai, Julia L. Lin. (2010). Leveraging tenant-incubator social capital for organisational learning and performance in incubation programme. *International Small Business Journal, 28*(1), 90-113.

Fishback, B. (2009). A new model to catalyse a movement of high-growth entrepreneurs *Kauffman Thoughtbook 2009* (pp. 52-56). Kansas City: Ewing Marion Kauffman Foundation.

Fry, F. L. (1987). The role of incubators in small business planning. *American Journal of Small Business, 12*(1), 51-61.

George, G., Zahra, S. A., & Wood Jr, D. R. (2002). The effects of business–university alliances on innovative output and financial performance: a study of publicly traded biotechnology companies. *Journal of Business Venturing, 17*(6), 577-609.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Berkeley, CA: University of California Press.

Giones, F., Zhou, Z., Miralles, F., & Katzy, B. (2012). *A Constructivist approach for technology-based entrepreneurship.* Paper presented at the The XXIII International Society for Professional Innovation Management Conference 2012, Barcelona, Spain.

Granovetter, M. (1983). The Strength of Weak Ties: A network theory revisited. *Sociological Theory, 1*, 201-233.

Grimaldi, R., & Grandi, A. (2005). Business incubators and new venture creation: an assessment of incubating models. *Technovation, 25*, 111-121.

Group, A. C. (2003). Evaluation of the BITS incubator program and the Intelligent Island incubator *Report to the Australian Government Department of Communications, Information Technology and the Arts*. Melbourne: Allen Consulting Group.

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park, California: Sage Publishing.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. Chapter 6 (p. 105-118) in Denzin, NK & Lincoln, YS (Eds.) Handbook of Qualitative Research: Thousand Oaks, Ca.: Sage.

Guerrero, M., Toledano, N., & Urbano, D. (2011). Entrepreneurial universities and support mechanisms: a Spanish case study. *International Journal of Entrepreneurship and Innovation Management, 13*(2), 144-160.

Hackett, S. M. (2004). Real options and the option to incubate: An exploratory study of the process of business incubation. Retrieved 10th October 2010, from SSRN http://ssrn.com/abstract=1260438

Hackett, S. M., & Dilts, D. M. (2004a). A real options-driven theory of business incubation. *Journal of Technology Transfer, 29*(1), 41-54.

Hackett, S. M., & Dilts, D. M. (2004b). A systematic review of business incubation research. *Journal of Technology Transfer, 29*(1), 55-82.

Hackett, S. M., & Dilts, D. M. (2008). Inside the black box of business incubation: Study B - scale assessment, model refinement and incubation outcomes. *Journal of Technology Transfer, 33*, 439-471.

Hall, J. (1974). Interpersonal style and the communication dilemma: I. Managerial implications of the Johari Awareness Model. *Human Relations, 27*, 381-399.

Hannon, P. D. (2004). A qualitative sense-making classification of business incubation environments. *Qualitative Market Research: An International Journal, 4*, 274-283.

Hannon, P. D. (2005). Incubation policy and practice: building practitioner and professional capability. *Journal of Small Business and Enterprise Development, 12*(1), 57-75.

Hannon, P. D., & Chaplin, P. (2003). Are incubators good for business? Understanding incubation practice - the challenges for policy. *Environment and Planning C: Government and Policy, 21*, 861-881.

Hansen, M. T., Chesbrough, H. W., Nohria, N., & Sull, D. N. (2000). Networked Incubators: Hothouses of the new economy. *Harvard Business Review, September/October*, 77-84.

Harman, P. (2009). *The global picture of business incubation*. Paper presented at the Small Business Development Conference, Bondi Beach, Sydney, Australia.

Heron, J. (1996). *Co-operative inquiry: research into the human condition*. Thousand Oaks, California: Sage Publishing.

Hindle, K., & Klyver, K. (2011). *Handbook of research on new venture creation*. Cheltenham: Edward Elgar Publishing.

Hisrich, R. D., & Smilor, R. W. (1988). The university and business incubation: Technology transfer through entrepreneurial development. *The Journal of Technology Transfer, 13*(1), 14-19.

Jensen, K. B. (1987). Field test of a strategic market planning model for privately held small/medium-sized firms. *Journal of Small Business & Entrepreneurship, 5*(2), 46-52.

Johannisson, B. (1988). Business formation - a network approach. *Scandinavian Journal of Management, 4*(3/4), 83-99.

Keat, R., & Urry, J. (2011). *Social Theory as Science (Routledge Revivals)*. London, United Kingdom: Routledge.

Ketchen Jr, D. J., Thomas, J. B., & Snow, C. C. (1993). Organizational configurations and performance: a comparison of theoretical approaches. *Academy of management journal, 36*(6), 1278-1313.

Kitagawa, F., & Robertson, S. (2012). High-tech entrepreneurial firms in a university-based business incubator: Spaces of knowledge, resource heterogeneity and capital formation. *Entrepreneurship and Innovation, 13*(4), 249–259

Knopp, L. (2012). State of the Business Incubation Industry *NBIA*. Athens, Ohio.

Krauss, S. E. (2005). Research paradigms and meaning making: A primer. *The Qualitative Report, 10*(4), 758-770.

Lalkaka, R. (2001). Technology business incubators to help build an innovation-based economy. *Journal of Change Management, 3*(2), 167-176.

Lalkaka, R. (2003). Business incubators in developing countries: characteristics and performance. *International Journal of Entrepreneurship and Innovation Management, 3*(1/2), 31-55.

Lave, J., & Wenger, E. (1991). *Situated Learning - legitimate peripheral participation*. Cambridge: Cambridge University Presa.

Leblebici, H., & Shah, N. (2004). The birth, transformation and regeneration of business incubators as new organisational forms: understanding the interplay between organisational history and organisational theory. *Business History, 46*(3), 353-380.

Lee, L., & Hunt, A. (2008). Business Incubators: Do They Matter? A qualitative study of business incubators in Idaho's Treasure Valley. Boise, Idaho: Boise State University.

Lerner, J. (2010). The future of public efforts to boost entrepreneurship and venture capital. *Small Business Economics, 35*, 255-264.

Lewis, D. A. (2001). Does Technology Incubation Work? A Critical Review. Washington, D.C.: Economic Development Administration, United States Department of Commerce.

Lewis, D. A., Harper-Anderson, E., & Molnar, L. A. (2011). Incubating Success: Incubation best practices that lead to successful new ventures: U.S. Department of Commerce Economic Development Administration.

Lichtenstein, G. A. (1992). *The significance of relationships in entrepreneurship: A case study of the ecology of enterprise in two business incubators.* Doctor of Philosophy, University of Pennsylvania, Pennsylvania.

Lish, A. D. (2012). *Anticedents of business incubator effectiveness: an exploratory study.* Doctor of Business Administration, Nova Southeastern University, Orlando, Florida.

Louca, J. (2003). Multifactor productivity and innovation in Australia and its States. In C. Williams, M. Draca & C. Smith (Eds.), *Productivity and regional economic performance in Australia* (pp. 99-138). Brisbane, Australia: Office of Economic and Statistical Research.

Markman, G. D., Phan, P. H., Balkin, D. B., & Gianiodis, P. T. (2005). Entrepreneurship and university-based technology transfer. *Journal of Business Venturing, 20*(2), 241-263.

Marlow, S., & McAdam, M. (2012). Analyzing the influence of gender upon high technology venturing within the context of business incubation. *Entrepreneurship Theory and Practice, 36*(4), 655-676.

Mattare, M., Ashley-Cotleur, C., & Masciocchi, C. M. (2012). A New Small City Business Incubator: A Business Community's Attitudes and Desired Services. *Journal of Strategic Innovation and Sustainability, 8*(1), 46-56.

Maville, A. J. (2005). *The economic impact of a business incubator: a case study from the North East of England, exploring regional and sub-regional policy tensions.* Master of Arts in Human Geography Research, University of Newcastle upon Tyne, Newcastle, United Kingdom.

Mazzarol, T. (2006a). *Entrepreneurship and Innovation: a manager's perspective*. Prahran, Victoria: Tilde University Press.

Mazzarol, T. (2006b). *Small business management: an applied approach*. Prahran, Victoria: Tilde University Press.

McAdam, M., & Marlow, S. (2008). A preliminary investigation into networking activities within the university incubator. *International Journal of Entrepreneurial Behaviour & Research, 14*(4), 219-241.

McAdam, R., Keogh, W., Galbraith, B., & Laurie, D. (2005). Defining and improving technology transfer business and management processes in university innovation centres. *Technovation, 25*(12), 1418-1429.

Mian, S. A. (1994). US university-sponsored technology incubators: an overview of management, policies and performance. *Technovation, 14*(8), 515-528.

Mian, S. A. (1996). The university business incubator: A strategy for developing new research/technology-based firms. *The Journal of High Technology Management Research, 7*(2), 191-208

Mian, S. A. (1997). Assessing and Managing University TBIs. *Journal of Business Venturing, 12*, 251-285.

Mian, S. A. (2011). University's involvement in technology business incubation: what theory and practice tell us? *International Journal of Entrepreneurship and Innovation Management, 13*(2), 113-121.

Mian, S. A., Fayolle, A., & Lamine, W. (2012). Building sustainable regional platforms for incubating science and technology businesses: Evidence from

US and French science and technology parks. *Entrepreneurship and Innovation, 13*(4), 235–247.

Mitchell, J. C. (1969). *The concept and use of social networks*. Indianapolis: Bobbs-Merrill.

Monkman, D. (2010). Business incubators and their role in job creation. *Small Business Committee, United States House of Representatives*.

NAEC. (2004). Benchmarking Incubators: background report for the Entrepreneurship Index (pp. 46). Copenhagen, Denmark: National Agency for Enterprise and Construction.

NBIA. (2012a). Business incubation FAQ Retrieved 30th November 2012, from http://www.nbia.org/resource_library/faq/

NBIA. (2012b). The history of business incubation Retrieved 30th November 2012, from http://www.nbia.org/resource_library/history/

NBIA. (2012c). Joseph Mancuso Retrieved 30th November 2012, from http://www.nbia.org/about_nbia/founders_awards/mancuso.php

NBIA. (2012d). What is Business Incubation? Retrieved 30th November 2012, from http://www.nbia.org/resource_library/what_is/index.php

Neergaard, H., & Ulhøi, J. P. (2007). *Handbook of qualitative research methods in entrepreneurship*. Cheltenham, United Kingdom: Edward Elgar Publishing.

Nowak, M. J., & Grantham, C. E. (2000). The virtual incubator: managing human capital in the software industry. *Research Policy, 29*(2), 125-134.

O'Neal, T. (2005). *Assessing the impact of university technology incubator practices on client performance.* Doctor of Philosophy, University of Central Florida, Orlando, Florida.

OECD. (1999). Business Incubation: International Case Studies.

OECD. (2010). Technology Incubators *OECD Innovation Policy Platform*. Paris, France: Organisation for Economic Co-operation and Development.

Patton, D., & Marlow, S. (2011). University technology business incubators: helping new entrepreneurial firms to learn to grow. *Environment and Planning C: Government and Policy, 29*(911-926).

Patton, D., Warren, L., & Bream, D. (2009). Elements that underpin high-tech business incubation processes. *Journal of Technology Transfer, 34*, 621–636.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, California: Sage Publications.

Pena, I. (2004). Business incubation centers and new firm growth in the Basque country. *Small Business Economics, 22*, 223–236.

Perren, L., & Ram, M. (2004). Case-study Method in Small Business and Entrepreneurial Research: Mapping Boundaries and Perspectives. *International Small Business Journal, 22*(1), 83–101.

Perry, C., Alizadeh, Y., & Riege, A. (1997). *Qualitative methods in entrepreneurship research.* Paper presented at the Proceedings of the Annual Conference of the Small Enterprise Association Australia and New Zealand, Coffs Harbour, Australia.

Perry, C., & Coote, L. (1994). *Process of a case study research methodology: tool for management development?* Paper presented at the Annual Conference of the Australian and New Zealand Association of Management, Wellington, New Zealand.

Perry, C., Riege, A., & Brown, L. (1999). Realism's role among scientific paradigms in marketing research. *Irish Marketing Review, 12*(2), 16-23.

Peters, L., Rice, M., & Sundararajan, M. (2004). The role of incubators in the entrepreneurial process. *Journal of Technology Transfer, 29*(1), 83-91.

Peters, L., Rice, M., & Sundararajan, M. (2004). The role of incubators in the entrepreneurial process. *The Journal of Technology Transfer, 29*(1), 83-91.

Petree, R., Petkov, R., & Spiro, E. (1997). Technology parks - concept and organisation.

Phillips, R. G. (2002). Technology business incubators: how effective as technology transfer mechanisms? *Technology in Society, 24*(3), 299-316.

Phillipson, J., Shucksmith, M., Turner, R., Garrod, G., Lowe, P., Harvey, D., . . . Woods, A. (2011). Rural Economies: Incubators and catalysts for sustainable growth. Newcastle, United Kingdom: Centre for Rural Economy, Newcastle University.

Realcommercial.com.au. (2012) Retrieved 24th May 2012, from www.realcommercial.com.au

Rice, M. P. (2002). Co-production of business assistance in business incubators: An exploratory study. *Journal of Business Venturing, 17*, 163–187.

Ritchie, J., & Spencer, L. (1994). Qualitative data analysis in for applied policy research. In A. Byrman & R. G. Burgess (Eds.), *Analysing Qualitative Data*. London: Routledge.

Rosenberger, J. (2003a). *What are real options? A review of empirical research*. Paper presented at the Academy of Management, Seattle, Washington.

Rosenberger, J. (2003b). *What are real options? A review of empirical research.* Paper presented at the Academy of Management, Seattle, WA.

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review, 63*(2), 134-139.

Rothaermel, F. T., & Thursby, M. (2005). University–incubator firm knowledge flows: assessing their impact on incubator firm performance. *Research Policy, 34*(3), 305-320.

Rothschild, L., & Darr, A. (2005). Technological incubators and the social contrsuction of innovation networks: an Israeli case study. *Technovation, 25*(1), 59-67.

Sayer, A. (2000). *Realism and social science*. Thousand Oaks, California: Sage Publishing.

Schaper, M. T., & Lewer, J. (2009). Business incubation in Australia: policies, practices and outcomes. *Asia Pacific Journal of Innovation and Entrepreneurship, 3*(3), 37-46.

Schwartz, M. (2009). Beyond incubation: an analysis of firm survival and exit dynamics in the post-graduation period. *Journal of Technology Transfer, 34*, 403–421.

Schwartz, M. (2011). Incubating an Illusion? Long-term incubator firm performance after graduation. *Growth and Change*, *42*(4), 491–516.

Scillitoe, J. L., & Chakrabarti, A. K. (2010). The role of business incubators in assisting new ventures. *Technovation, 30*(3), 155-167.

Scott, J. (2000). *Social Network Analysis: A Handbook*. Thousand Oaks, California: Sage Publications.

Servon, L. J. (2006). Microenterprise development in the United States: Current challenges and new directions. *Economic Development Quarterly, 20*(4), 351-367.

Shaw, E. (2006). Small Firm Networking: An insight into contents and motivating factors. *International Small Business Journal*, *24*(5), 5-29.

Sipos, Z., & Szabo, A. (2006). Benchmarking of business incubators in CEE and CIS transition economies. Budapest, Hungary: The Foundation for Scientific and Industrial Research.

Small Business Development Corporation. (2011). Small Business Statistics WA

Smilor, R. (1987). Managing the incubator system: critical success factors to accelerate new company development. *IEEE Transactions on Engineering Management, 34*(4), 146-156.

Stake, R. (2008). Qualitative Case Studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Strategies of Qualitative Inquiry* (3rd ed.). Thousand Oaks, California: Sage Publications Inc.

Stangler, D., & Litan, R. E. (2009). Where will the jobs come from? (pp. 16): Ewing Marion Kauffman Foundation.

Storey, D. J. (1994). *Understanding the Small Business Sector*. London: Routledge.

Storey, D. J. (1996). *Understanding the small business sector*. London, United Kingdom: Routledge.

Swierczek, F. W. (1992). Strategies for business innovation: Evaluating the prospects of incubation in Thailand. *Technovation, 12*(8), 521-533.

Tamasy, C. (2007). Rethinking technology-oriented business incubators: developing a robust policy instrument for entrepreneurship, innovation and regional development? *Growth and Change, 38*(3), 460-473.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal, 18*(7), 509-533.

Thierstein, A., & Willhelm, B. (2001). Incubator, technology and innovation centres in Switzerland: features and policy implications. *Entrepreneurship and Regional Development, 13*(4), 315-331.

Tötterman, H., & Sten, J. (2005). Start-ups : Business incubation and social capital. *International Small Business Journal, 23*, 487-511.

Udell, G. (1990). Are Business Incubators Really Creating New Jobs by Creating New Businesses and New Products. *Journal of Product Innovation Management, 7*, 108-122.

Voisey, P., Gornall, L., Jones, P., & Thomas, B. (2006). The measurement of success in a business incubation project. *Journal of Small Business and Enterprise Development, 13*(3), 454-468.

von Zedtwitz, M. (2003). Classification and management of incubators: aligning strategic objectives and competitive scope for new business facilitation. *International Journal of Entrepreneurship and Innovation Management, 3*(1), 176-196.

von Zedtwitz, M., & Grimaldi, R. (2006). Are Service Profiles Incubator-Specific? Results from an Empirical Investigation in Italy. *Journal of Technology Transfer, 31*, 459-468.

Walker, E. A. (2003). Home-based businesses: Setting straight the urban myths. *Small Enterprise Research, 11*(2), 35-48.

Warren, L., Patton, D., & Bream, D. (2009). Knowledge acquisition processes during the incubation of new high technology firms. *International Entrepreneurship and Management Journal, 5*, 481–495.

Wenger, E. (1998). *Communities of Practice: Learning, meaning and identity*. New York: Cambridge Press.

Westhead, P., & Storey, D. (1996). Managment training and small firm performance: why is the link so weak? *International Small Business Journal, 14*(13), 13-24.

Wiggins, J., & Gibson, D. V. (2003). Overview of US incubators and the case of the Austin Technology Incubator. *International Journal of Entrepreneurship and Innovation Management, 3*(1-2), 56-66.

Yin, R. K. (1994). *Case study research design and methods* (2nd ed.). Thousand Oaks, California: Sage Publications.

Yin, R. K. (2009). *Case Study Research: Design and methods* (4th ed.). Thousand Oaks, California: Sage Publications.

Yin, R. K. (2011). *Qualitative research from start to finish*. New York: Guilford Press.

APPENDIX A

HOW SUCCESSFUL HAVE BUSINESS INCUBATORS BEEN IN DEVELOPING SMES IN AUSTRALIA

Why have you been chosen for this survey?

You have been chosen as you are currently a manager at a business incubator. You have first-hand experience in managing the processes involved in business incubation. At the outset, the researcher would like to thank you for your time in answering these questions. Participation is voluntary and you may withdraw at any time.

What is the survey about?

The research is aiming to identify aspects of business incubation that are positive and negative, to develop a model of delivery that maximises the assistance to business start-ups. The study will investigate how a business incubator program may be implemented in Australia, learning from current experience. The research is being undertaken as a part of the requirements of a Masters of Business at Edith Cowan University. One of the supervisors for the project is Dr Janice Redmond, from the School of Management. Her contact details are:

Dr Janice Redmond
Edith Cowan University
Faculty of Business & Law
School of Management
270 Joondalup Drive
Joondalup WA 6027

Work: 08 6304 2153

What do you do?

We anticipate that each interview would last no longer than one hour. With your consent the interviews will be recorded to ensure accuracy of the collected data. All information gathered in the interviews will be confidential, and participants will not be identified. The interviews may be conducted face to face or over the telephone, this will be

determined by you and your timing. The researcher will be in contact to arrange the most convenient interview method for you.

We would also like you to distribute letters and consent forms to previous and current clients of your business incubator. The letter will outline the purpose and procedures involved in the study and request confirmation of your current and former clients' willingness to participate.

Any questions?
Please feel free to contact us as detailed below for further information about your participation. This research has been approved by the University's Human Research Ethics Committee. If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact:

Research Ethics Officer
Edith Cowan University
270 Joondalup Drive
JOONDALUP WA 6027
Phone: 08 6304 2170
Email: research.ethics@ecu.edu.au

If you are willing to participate in this research project which has important goals for business start-ups in Australia, please return the signed consent form using the reply paid envelope that has been provided for your convenience. If you have any questions regarding the project, please do not hesitate to contact me, my details are outlined below.

Yours sincerely

Mr Phillip Kemp
School of Management Edith Cowan University
Joondalup Drive Joondalup WA 6027
Telephone: 0414 759 847
Email: pkemp@our.ecu.edu.au

School of Management

HOW SUCCESSFUL HAVE BUSINESS INCUBATORS BEEN IN DEVELOPING SMES IN AUSTRALIA

Consent Form

I, the manager of a business incubator, have a copy of the Information Letter and understand the aims benefits and potential risks of the survey. I understand that my participation will be voluntary and realise that I can withdraw at any time. I understand that the interview will be recorded to determine the accuracy in recording the responses. I also understand that no business or person will be identifiable in any final report or publication arising from this research project.

Name: _____

Signed: _____

Date: _____

Please indicate if you would like to receive a copy of the research project once completed and the email address or postal address you would like it to be sent to.

YES / NO (please circle), I would like to receive a copy of the finished research project, please send it to

_____

Mr Phillip Kemp
School of Management
Edith Cowan University
Joondalup Drive
Joondalup WA 6027
Phone: 0414 759 847
Email: pkemp@our.ecu.edu.au

HOW SUCCESSFUL HAVE BUSINESS INCUBATORS BEEN IN DEVELOPING SMES IN AUSTRALIA

Why have you been chosen for this interview?

You have been chosen as you are currently a tenant at a business incubator or you have recently graduated from a business incubator. You have first-hand experience of the processes involved in business incubation as a client or former client of a business incubator. At the outset, the researcher would like to thank you for your time in answering these questions. Participation is voluntary and you may withdraw at any time.

What is the interview about?

The research is aiming to identify aspects of business incubation that are positive and negative, to develop a model of delivery that maximises the assistance to business start-ups. The study will investigate how a business incubator program may be implemented in Australia, learning from current experience. The research is being undertaken as a part of the requirements of a Masters of Business at Edith Cowan University. One of the supervisors for the project is Dr Janice Redmond, from the School of Management. Her contact details are:

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What do you do?

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determined by you and your timing. The researcher will be in contact to arrange the most convenient interview method for you.

REMEMBER, THERE IS NO RIGHT OR WRONG ANSWER

Any questions?

Please feel free to contact us as detailed below for further information about your participation. This research has been approved by the University's Human Research Ethics Committee. If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact:

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Edith Cowan University
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Phone: 08 6304 2170
Email: research.ethics@ecu.edu.au

If you are willing to participate in this research project which has important goals for business start-ups in Australia, please return the signed consent form using the reply paid envelope that has been provided for your convenience. If you have any questions regarding the project, please do not hesitate to contact me, my details are outlined below.

Yours sincerely

Mr Phillip Kemp
School of Management Edith Cowan University
Joondalup Drive Joondalup WA 6027
Telephone: 0414 759 847
Email: pkemp@our.ecu.edu.au

School of Management

HOW SUCCESSFUL HAVE BUSINESS INCUBATORS BEEN IN DEVELOPING SMES IN AUSTRALIA

Consent Form

I, the business owner/manager, have a copy of the Information Letter and understand the aims benefits and potential risks of the survey. I understand that my participation will be voluntary and realise that I can withdraw at any time. I understand that the interview will be recorded to determine the accuracy in recording the responses. I also understand that no business or person will be identifiable in any final report or publication arising from this research project.

Name: _____

Signed: _____

Date: _____

Please indicate if you would like to receive a copy of the research project once completed and the email address or postal address you would like it to be sent to.

YES / NO (please circle), I would like to receive a copy of the finished research project, please send it to

_____

Mr Phillip Kemp
School of Management
Edith Cowan University
Joondalup Drive
Joondalup WA 6027
Phone: 0414 759 847
Email: pkemp@our.ecu.edu.au

Questions to Incubator Managers

1. Is the incubator manager Male Female

2. How old is the incubator manager?

3. How many years has the incubator manager worked for the business incubator?

4. What is you're the incubator manager's background? Had they managed/worked for a business incubator prior to their current role as incubator manager?

5. How many years has the business incubator been operating?

6. What is the legal structure of the business incubator?

7. What is the main focus of the business incubator?
   Starting businesses
   Job creation
   Industry specific

8. How many graduates have been achieved over that time?

9. How is success measured at the business incubator?

10. Who are the key stakeholders for the business incubator? If one is a university, what role/value do they play in the operations of the business incubator?

11. How many tenants does the incubator have currently?

12. What criteria are used to assess potential tenants before entry into the incubator?

13. At what stage can businesses enter the incubator?
    Start-up
    Less than 6 months of operations
    6 – 12 months
    Greater than 12 months

14. What services are provided to tenants by incubator staff?

15. What services and by whom are provided outside of the incubator? Is this managed by incubator staff? Who pays?

16. How long can tenants remain within the incubator? Is there a limit to their stay? How long is that? Is this policy rigid or flexible?

17. What criteria are used to determine when a company should leave the incubator?

18. What do you think is the value of the incubator to your clients? What difference does the incubator make? What are the advantages/disadvantages?

19. How would you rate the interaction between the incubator management team/staff with the tenants?

20. Do you conduct an exit survey with your tenants leaving the business incubator? What are the main reasons for leaving the incubator?

21. Do you maintain contact with former tenants (graduates)? In what form and how often do you communicate with them?

22. Do you believe the incubator is making a contribution to economic development or to the community in general? In what ways?

23. What would you change about the business incubator if you had a free hand to make any change you wanted?

24. Do you believe that there is a better way to support business start-ups? What is it?

General questions to business owners

1. Is the interviewee the owner of the business? YES NO

2. Is the interviewee: male female?

3. What age bracket do you fit within?
   - Less than 20 years old
   - 20 – 29 years old
   - 30 – 39 years old
   - 40 – 49 years old
   - 50 – 59 years old
   - 60 years plus

4. What is the legal structure of the business?
   - Sole trader
   - Partnership
   - Proprietary Limited Company (Pty Ltd)
   - Other

5. What industry classification best describes the activities of the business?

   - Agriculture, forestry, fishing and hunting
   - Mining
   - Manufacturing
   - Electricity, gas and water supply
   - Construction
   - Wholesale trade
   - Retail trade
   - Accommodation, cafes and restaurants
   - Transport and storage
   - Communication services
   - Finance and insurance
   - Property and business services
   - Education
   - Health and community services
   - Cultural and recreational services
   - Personal and other services

6. How long has the business been operating? (in months/years)

7. How long has the business been located in the incubator? (in months/years)

8. What is the current number of employees of the business? Distinguish between owners and employees, full-time, part-time and casual.

9. Are the clients of the business other businesses or general consumers?

10. Is any income generated from overseas? (Yes/no) If yes, what proportion of overall income (as a percentage) and from where?

11. How much money has been invested by the owners (or private investors or bank finance) to get the business to where it is today? Include stages of funding, amounts in absolute dollar value, residual payments, ROI, timing of investments.

12. Have you previously operated a business? (yes/no) How long did you operate the business for? Was it located in a business incubator?

13. Were you provided with additional support from the business incubator that was not from one of the staff of the incubator? What was provided? Was there a charge?

14. Have you patented any technology whilst being in the incubator? What was it? How did the incubator assist with the patenting process?

Questions about the incubator to current tenants

Why did you start (locate) your business within the business incubator?

What do you think are the advantages of operating your business from the incubator?

What do you think are the disadvantages of operating your business from the incubator?

How would you rate the value of interaction with the business incubator manager/business advisor compared to other advice, for example your accountant?

What services do you use that are provided by the business incubator?

Administration/secretarial services

Business advice

Mentoring

Workshops and seminars

Networking

Industry linkages

Other?

Questions about the incubator to former tenants

Why did you start (locate) your business within the business incubator?

Would you do the same again given the outcome?

What do you think were the advantages of operating your business from the incubator?

What do you think were the disadvantages of operating your business from the incubator?

How would you rate the value of interaction with the business incubator manager/business advisor?

What services did you find the most useful that were provided by the business incubator?

- Administration/secretarial services
- Business advice
- Mentoring
- Workshops and seminars
- Networking
- Industry linkages
- Other?

How long did you stay at the business incubator? Why did you leave?

Do you maintain contact with the business incubator, or other tenants from the incubator? How often, for what purpose and what is the value?